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CONTENTS

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Policy

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PSYCHOTHERAPY IN THE PRACTICE OF MEDICINE

Allen J. Enelow, MD, Med Arts Sci 21(3):79–88, Third Quarter 1967.

Psychotherapy may be defined as the use of communication to improve the health and to reduce the discomfort of the patient. Though it is now usually considered the province of the psychiatrist, psychotherapy has really been part of medicine since the beginning of man's efforts to heal the illnesses of other men. Psychotherapy was one of the few therapeutic tools that physicians of the ancient world possessed. Even today, many therapeutic successes in apparently organic ailments are really psychotherapeutic successes, though they are unsuspected as such by patient and by doctor.

Modern psychotherapy really stems from the work of the general practitioner A. A. Liebault, who practiced in the latter part of the nineteenth century in Nancy, France. Here he treated the frugal French peasants with conventional methods at his usual fee, but with hypnosis at no fee in order to carry out his studies. He had no difficulty finding subjects for his research, and he demonstrated that many of the ailments for which his patients consulted him could be treated with psychotherapeutic means. Before Freud began his career in Vienna as a psychotherapist, he visited with Liebault and was much influenced by what he observed at the clinic.

Several questions are pertinent to a consideration of the appropriateness of psychotherapy as an activity of the nonpsychiatrist general practitioner of medicine. The first of these questions is: *What do patients expect from their doctors?* Although most physicians feel that their role is to remove physical symptoms or to correct anatomical problems or physiological imbalances, most patients, on the other hand, expect something more. Although patients expect to receive help for their physical problems, they also expect to be helped to achieve a *feeling* state of well-being. This feeling of comfort and relief from depression or anxiety is far more likely to be a result of the psychotherapy inherent in the doctor's role than it is from his medicine or from his surgical ministration.

A second question pertinent to the practice of psychotherapy by the general practitioner physician is: *What does psychotherapy have to do with the management of physical disorders?* The fact is, the management of almost every physical disorder is facilitated and improved in its efficiency when psychotherapy is part of the doctor's work with the patient. Examples of illnesses that cannot be treated without some awareness of the psychological factors and without some attention to support, reassurance, and other psychotherapeutic measures are: obesity, diabetes, chronic diseases and their debilitating psychological effects, compensable injuries, particularly industrial injuries, and the translation into action of the doctor's treatment recommendations to every patient.

Still another question is: *When can a general practitioner or nonpsychiatrist specialist do psychotherapy?* The answer is that he is doing psychotherapy all the time. Whether he does it well or not is a different matter; often he does a good job without realizing it. But psychotherapy is part of the fabric of the medical relationship. Only one thing is required for psychotherapy to take place—that the doctor and the patient be together to try to communicate with each other. Fifty minutes, the traditional time period allotted to the patient by the psychiatrist, is not necessary in order for such a transaction to take place. Psychotherapy can take place in five minutes or in twenty minutes; it can take place when the doctor sees the patient once a week, once a month, or once a year; and it can take place during a history, during a physical examination, or at any other time when the doctor and the patient are together.

In this paper I will discuss a concept of supportive psychotherapy that could be called "process-oriented," and the characteristics of that approach. I will then discuss supportive psychotherapy as part of the doctor role, including the techniques of listening, promoting the expression of feelings, giving reassurance, using directive measures, structuring the environment, using drugs, and counseling the family.

A process-oriented approach to psychotherapy is based on the assumption that what takes place between the doctor and the patient (the process between them) is the most important area for the doctor's attention. Listening to what the patient says (the content) without listening to the way he says it and without observing the way he behaves with the doctor (the process) will reduce the value of the information that the physician gets. Process-oriented psychotherapy is based on the following precepts:

1. The promotion of honest, direct, and undis-

torted communication makes insight into the patient's difficulties possible. The patient's feelings become clear, vague thoughts are crystallized, and the nature of disturbed relationships become apparent.

2. The sharing of feelings gives relief from uncomfortable intensity of feelings.

3. In order to accomplish these two things, the promotion of undistorted communication and the sharing of feelings, the doctor should attempt to facilitate the patient's telling of his own story in his own way. He should pick up the signs of tension, anxiety, or depression, which the patient is not talking about, and should comment to the patient about them. Further, he should let the patient talk as much as possible without interruption. Finally, he should try to promote a mature relationship between himself and the patient.

This last idea deserves some elaboration. How does a physician promote a mature relationship between himself and the patient?

The most important element in doing this is to pay close attention to the way the patient is relating to the doctor. Is the patient clinging and dependent? Is he submissive and docile? Does the patient behave seductively? Does he tease? Is the patient a chronic complainer? Does the patient cajole the doctor for special privileges or favors? Does the patient try to precipitate arguments? These are some characteristic immature, unhealthy, or neurotic ways used by some patients to communicate with others. The patient with neurotic difficulties will attempt to get the doctor to engage in this kind of interaction with him. It is important that the physician be alert to these actions, that he be sensitive enough to pick them up and not get involved in them. It is a difficult task for the physician. It is easier to allow the clinging patient to cling, to dominate the submissive patient, to be flattered and gratified by the seductive patient, and so on. Often the interaction goes on unconsciously, neither doctor nor patient fully aware of it. The most helpful attitude the doctor can take is to remain friendly and interested and to point out what the patient is doing, rather than to get involved in the interaction. Such confrontations require tact and sympathy.

Still another principle of process-oriented psychotherapy is that the physician should not interfere with the patient's feeling of responsibility for himself. Instead, the physician should encourage the patient to make his own decisions and should resist the efforts of the patient to get the doctor to make decisions for him. Obviously, those decisions that only the physician can make, such as whether surgery is necessary or whether the patient should be hospitalized, are not included. In fact, it is important to be aware just what decisions rightly belong to the patient and what decisions rightly belong to the physician. Each should maintain the integrity of his own identity.

A final principle of psychotherapy is that the physician should avoid "grinding his own ax." Maturity involves a respect for differences. The physician who insists that the patient must agree with him on all things is behaving just like his neurotic patient and thereby fostering his neurosis. On the other hand, that physician who can tolerate differences between himself and the patient and respect the right of each to have his own opinion, his own viewpoint, and his own belief, is behaving in a mature way and is promoting such maturity on the part of the patient.

Most physicians prefer not to get involved with regularly scheduled psychotherapy with their patients. This attitude is right; for most physicians, involvement would be a mistake. A few physicians enjoy doing this sort of thing; and with the development of skill (and with some supervision), they can carry it off successfully. However, it is unnecessary to arrange psychotherapy so formally; a therapeutic interview can occur any time two conditions are present: (1) the patient wishes to communicate and (2) the doctor has sufficient sensitivity to appreciate this need and to create a situation where communication is facilitated. Such an interview can lead to further interviews or just to the suggestion that the opportunity is there to talk further whenever the patient wishes to avail himself of it.

Supportive Psychotherapy

Everyone meets disruptive or upsetting circumstances, such as death of a loved one, financial reverses, disappointment in love, family crises, serious illness, and psychotic disturbances in a member of the family. The usual symptoms of such crises—anxiety, depression, and/or obsessional preoccupation—prevent an efficient solution or an attempt to deal with the problem. Supportive techniques can often diminish the intensity of these symptoms so that the patient can muster his own resources to cope with the difficulty.

Some techniques that are used by troubled people to reduce the intensity of their feelings in uncomfortable emotional experiences include excessive use of alcohol, sexual promiscuity, burying oneself in work, or retreating from work and other respon-

sibilities. All of these techniques are based on a wish to turn to some other person who will provide a feeling of closeness and understanding. Many people can seek such help directly instead of taking some of the foregoing destructive approaches. Of these people, many go to their family physician.

Some physicians are consulted often and others are not. This consultation is usually the result of the doctor-patient relationship that preceded the moment of crisis. That doctor who has clearly communicated to his patient by his general sympathetic tact and concern that he is interested in helping with such problems will find that his patient will consult him without a moment's hesitation when the necessity arises. But that physician who demonstrates, by aloofness and by cutting off the patient whenever emotional or psychological concerns are brought up, that he is not interested in helping will rarely, if ever, be consulted by his patient at a time of emotional distress. The patient of that physician will likely turn to some other source of help. When the patient is unsure whether his doctor is interested in such problems or not, he may sound out the physician by describing somatic symptoms to begin with, as a kind of "admission ticket" to the doctor's office. The doctor's sensitivity to this strategy and his ability to discern that something else is bothering the patient and to communicate his interest to the patient will then determine whether the patient ever gets to the real reason he has consulted the physician that day.

It should be clarified here that *supportive psychotherapy,* which I am now going to describe in terms of what the doctor does, *has much less to do with what the doctor does than what he is*—and particularly, what he is to that patient. The physician's words and manner, his attitude toward the patient, his whole demeanor, constitute a supportive attitude. If this attitude is present, what the doctor does will be supportive. If this attitude of concern, sympathy, and interest is not there, no support will be given, although the doctor says exactly the right words.

A supportive attitude is compounded of the following elements: a genuine interest in and concern for the patient; a feeling of warmth of friendliness toward the patient; a desire to be of help to the patient; and a maintenance of sufficient reserve so that the physician remains clearly aware that he is engaging in a helping relationship while preserving his own personal and professional identity. Some of the techniques involved are: listening, promoting the expression of feeling, giving reassurance, using directive measures, structuring the environment, using drugs, and counseling the family.

Listening. The most important thing the physician can do is to be economical with his own words and to allow the patient the maximum opportunity to say what he wants to say. This tactic can be further facilitated by the physician's behavior. The interested physician can learn the techniques of facilitation, including picking up on what the patient has just said, repeating the last few words with a rising, questioning inflection, and using the non-verbal communication of intentness and interest—nodding and gesturing effectively. Listening is an *active* thing and does not mean sitting passively and letting the patient ramble on. Often, when the physician does much of the talking, he may be removing himself from the patient and may be preventing the patient from saying too much.

Promoting the Expression of Feeling. Through communication, tension can be reduced if the physician promotes in every possible way the expression of the patient's feeling. Often the best way to promote the expression of feeling is to pick up evidences from the patient's behavior of feelings that he is not discussing. For example, a seventeen-year-old girl consulted me because of headaches. Although she could not think of a reason for having headaches, and insisted that she had no psychological problems, she was obviously tense and restless. When these aspects of behavior were pointed out to her, at first she denied that the confrontation had any meaning. Then she admitted that she was indeed restless and tense, and she finally burst out with some guilty feelings about certain relatively normal sexual thoughts that had been preoccupying her. Actually, she was a girl from a close-knit family with high moral and ethical standards, and these thoughts, seemingly at variance with the standards of her family, upset her very much. When she finally described how she felt and was reassured that her thoughts were neither abnormal nor bad, she discovered that her headache had disappeared.

Giving Reassurance. Reassurance should be helpful but often fails to be so because many physicians reassure the patient too hastily. Reassurance is not helpful if the physician does not have a good understanding of the nature of his patient's problem. If fears of organic disease play a part in the patient's anxiety but the physician has not done a good work-up, reassurances will be unconvincing. The patient will only feel that the doctor does not know the problem well enough. Reassurance is most useful when the patient presents a problem about which

he has undue anxiety or concern, or about which his knowledge is faulty.

For example, a thirty-two-year-old man consulted me at the recommendation of his orthopedic specialist. He had suffered a lumbosacral sprain about six months before. Being a very tense person, he continued to have a good deal of muscle spasm, pain, and other musculoskeletal manifestations of tension and anxiety, even though there were no x-ray findings of injury to his back. He knew that the sprain should have cleared up. However, since he was a somewhat fearful man and knew nothing about the real source of the cramping pain in his back, he was convinced that he must have incurred a serious injury. When he was encouraged to express his feelings during the interview, a great deal of information emerged about the many problems that were promoting his anxiety and tension. He was reassured that this anxiety and tension, although causing the stiffness and cramping of his muscles, no longer had anything to do with his back sprain of six months ago. He was encouraged to return to work despite his discomfort, and was greatly relieved by the reassurance. He soon did return to work.

Using Directive Measures. There are times when the physician should make an important decision for the patient and express it directly and directively. At the point when anxiety is developing into panic or when the patient is showing evidence of an impending psychosis, the physician should take charge. For example, a twenty-two-year-old man, in a state of panic, consulted his physician. It was later discovered that this panic was related to a marriage which he was planning in the near future and about which he had a great deal of trepidation. The patient was unable to work because the anxiety had developed to such a degree that he was losing weight, was constantly tremulous, could not sleep, and was increasingly fearful about the anxiety itself. He even felt that he might be going out of his mind. The physician recommended a postponement of the marriage and a further discussion of his feelings with his fiancée. Almost magically, the panic was reduced and the anxiety became tolerable.

Structuring the Environment. The most effective way for the physician to structure the environment for the patient is to take him to the hospital. When panic reaches the point of disorganizing the patient and producing chaotic behavior, the patient should be taken to the psychiatric unit. The control involved and the reassurance that others will prevent complete disorganization of his behavior is the most reassuring thing that can happen to the patient. Hospitalization is often necessary with suicidal patients and with patients who are developing acute psychotic reactions. At such times it is important to get a psychiatric consultation or to refer the patient to a psychiatrist for further treatment.

Using Drugs. The giving of a tranquilizer or sedative can be supportive, not only because of the doctor-patient relationship. Often a patient who is upset or anxious reacts to the drug as though it were "essence of physician" and thereby curative. This attitude of the patient toward the physician is probably the basis of the placebo effect.

But should everybody who suffers from anxiety have drugs? The fact is that tranquilizers and sedatives are used too freely by physicians today. Not every patient who suffers transitory situational anxiety needs to be sedated or tranquilized. In fact, this dependence on drugs can often reduce the patient's motivation to find a solution to his problems. There has developed an almost pernicious notion, fostered by some of the more aggressive advertising of certain pharmaceutical manufacturing companies, that all anxiety must be abolished as soon as it appears.

In the first place, abolishing all anxiety is not possible, and, in the second place, it is probably not desirable. When a patient has acute situational anxiety that can be discussed and related to some immediate conflict, psychotherapy is preferable to drugs. When the anxiety is so severe that it is disorganizing to the patient or that it prevents him from functioning well, then a mild sedative or tranquilizer, such as a short-acting barbiturate or hydroxyzine, may help get the anxiety under control. But medicine is not enough. The patient must then have the opportunity to talk with the physician about his concerns. Finally, the physician should try to get the patient off the medicine as soon as possible.

In other instances, in chronic, intractable anxiety that has not yielded to any form of treatment, some kind of drug may be helpful. However, here one must be careful. The barbiturates produce tolerance and habitation. The so-called minor tranquilizers, such as chlordiazepoxide and meprobamate, produce habitation and often unpleasant side effects. The milder the sedation, the better.

Counseling the Family. Counseling the entire family has been the traditional role of the family doctor. However, in recent years, there has been a tendency toward loss of intimacy in the doctor-patient relationship. Unfortunately, too often, now,

not all members of the family go to the same doctor. When the doctor is able to attain in the family life the degree of intimacy and importance that the traditional physician role involves, he can better carry out his tasks as physician of the physical as well as of the mental health of the family itself.

There are several situations in which the general practitioner should meet with the entire family: the death of a family member, crises relating to physical illness in a family member, acute psychotic disorders in a family member, and emotional disturbances in a child or adolescent in the family.

The stability of the family is essential to the stability of its members. When the physician is concerned about the stability of the family, he should call in members of the family. Sometimes a doctor-family conference can lead to the diagnostic appraisal of disturbed relationships that are within the family and that affect each member. In other instances, such doctor-family conferences (several, if necessary) can lead to a solution of the family's conflict if the physician, using all the principles given in this paper, promotes free and open communication between the members of the family. In the case of the death of a family member, the physician should always try to see the entire family very soon after the death has occurred, if this is possible. The physician should arrange to spend enough time with the family to allow them to express their feelings, to answer their questions, and to help allay guilt feelings about whether or not they have done all they could have done for the deceased family member. Other such instances include the diagnosis of illnesses with unfavorable prognoses, such as cancer. Another important occasion for a family conference is a psychotic disorder that necessitates the hospitalization of a family member.

Conclusion

Psychotherapy is an important part of the physician's role. It need not be an activity so labeled and need not be done in a specified time slot. It is going on in every doctor-patient relationship, sometimes in a dimly recognized way, more often, unfortunately, unrecognized by the physician. The physician who makes himself aware of what is involved in psychotherapy will be of greater service to all of his patients and will find the management of his patients' organic illnesses facilitated and made more effective. Finally, he will be fulfilling a role expected of him by his patients—that of being a person with interpersonal skill, knowledge, and tact—a person to whom they can turn when in distress.

(The references may be seen in the original article.)

ACUTE INFECTIOUS LYMPHOCYTOSIS*

AN ETIOLOGIC AND EPIDEMIOLOGIC STUDY OF AN OUTBREAK

Marshall S. Horwitz, MD, and Gordon T. Moore, MD, New Eng J Med 279(8):399–404, August 22, 1968.

An outbreak of acute infectious lymphocytosis (white-cell counts of 26,000 to 93,800) was studied in 27 children at a state school for the mentally retarded. The search for an etiology of the disease included infectious and noninfectious agents. Examinations of stools for parasites, cultures of throat and stool for bacteria, and cultures of throat, stool and blood for viruses were done. An enterovirus, presently untyped, but resembling the Coxsackie A subgroup in physical, chemical and host specificity, was isolated in 21 percent of the patients' stool specimens. Fourfold rises in neutralizing antibody against this enterovirus occurred in the serums of a significantly greater proportion of patients than in patient contacts. Evidence suggests a causal relation between this agent and lymphocytosis.

In 1941 Smith described acute infectious lymphocytosis as an entity distinct from infectious mononucleosis. Acute infectious lymphocytosis is characterized by an elevated absolute count of small lymphocytes of normal appearance. The lymphocy-

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tosis may be accompanied by a variety of clinical signs; recovery is usually complete. Since 1941 sporadic cases and groups of cases have been reported from all over the world, but the cause of the illness remains unknown. This report summarizes the epidemiologic, clinical and laboratory findings studied in a recent outbreak of 27 cases at a state institution for retarded children and adults.

Description of the Outbreak

An outbreak of infectious lymphocytosis occurred over a four-month period in 1965 at a state institution for the retarded in southern Indiana. The institution has approximately 2,000 patients, but the outbreak was limited to the "nursery" building, which houses 238 mentally retarded children between the ages of three and 19 years. The children are grouped according to functional level and placed in 17 physically separated wards in the nursery.

The first case was recognized on October 4, 1965, in an asymptomatic six-year-old boy who had an abnormal white-cell count found on a routine check for drug toxicity. The count was 44,000, with 72 percent lymphocytes and 8 percent eosinophils. Previous random white-cell counts of the patients had been normal. Several days later, diarrhea was reported from the nursery; one of those affected was the patient with the elevated lymphocyte count. Additional white-cell counts were done as the diarrhea spread, and other cases of significant lymphocytosis were discovered. Seven weeks after the recognition of the first cases, the National Communicable Disease Center was invited to join the investigation of the epidemiology and etiology of the outbreak.

Methods of Study

The epidemiologic investigation began with physical examinations and an analysis of the records of the patients known to have lymphocytosis. Detailed histories included symptoms, date of onset, location of patient's bed in the nursery, contact with other children, food and water source and exposure to drugs, plants, animals and toxic agents.

A single white-cell count was done on every child in the nursery, and continuous surveillance was instituted in the wards considered high-risk areas. The nursery staff was instructed to observe the children for any illness and to do white-cell counts on anyone who became ill. Peripheral blood smears were examined from all children with elevated white-cell counts. This surveillance was maintained until the epidemic ended 10 weeks later.

Stools and throat swabs were collected for bacterial cultures from 15 percent of the children in the nursery, including all those known to have lymphocytosis when the investigation began; thereafter, stool specimens were collected in new cases and from asymptomatic contacts of known cases. Stool specimens were cultured on MacConkey's and SS agar. Pharyngeal swabs were cultured on blood and Bordet-Gengou mediums. Stools preserved in formalin and polyvinylalcohol were examined for parasites by the Indiana State Laboratory.

Specimens for viral study were collected concurrently with the bacterial specimens described above. Throat swabs, rectal swabs, stools, serum and buffy coats were collected, frozen and stored at -20 to $-70°C$. All specimens were inoculated into primary monkey-kidney tissue culture and HEp-2 tissue culture, and intraperitoneally into suckling mice. Selected specimens of serum, buffy coat and pharyngeal excretion were inoculated immediately after collection into human-embryo diploid fibroblasts and also passed intracerebrally into suckling mice. All tissue-culture material was passed at least twice before being discarded as negative. All viruses were identified by neutralization tests with hyperimmune reference serums currently in use at the Enterovirus Infections Unit of the National Communicable Disease Center. Antibody in patients' serums was measured by complement-fixation and neutralization tests.

The following tests for the characterization of viruses were done according to technics previously described: ether sensitivity; cationic stabilization; acid stability; determination of nucleic acid type by the inhibitor of DNA synthesis, 5-bromo-2′-deoxyuridine (BUdR); electron microscopy for viral size and shape; and histopathology.

Results

Epidemiologic Investigations

By the end of the epidemic, four months after recognition of the first case, abnormal lymphocyte counts had developed in 27 children. Diagnosis of the individual cases spanned 17 weeks, and cases occurred in more than half of the 17 nursery wards. Cases tended to cluster in time in the individual wards, but the irregularity of surveillance may have modified the reliability of this finding. The patients' mean age was nine and seven-tenths, and the range four to 15 years. The sex distribution of cases did not differ from that of the nursery population. No

cases occurred in the adult attendants who were in intimate contact with the affected children.

The epidemiology and case histories gave no evidence of common exposure to toxic agents, drugs, animals or contaminated food. The epidemiologic pattern of confirmed cases supports the conclusion that the illness was of infectious origin and transmitted by person-to-person contact.

Description of the Illness

The mean maximum white-cell count for the 27 patients with lymphocytosis was 57,200, with a range of 26,000 to 93,800. The lowest absolute lymphocyte count was 16,000, and lymphocytes accounted for at least 50 percent of the total white cells in all cases. The lymphocytes were mature, small and normal in appearance. The mean duration of elevated lymphocyte count was 15 days, and the longest was 24 days.

Symptoms were minimal with the exception of diarrhea. Fifteen of the 27 with lymphocytosis had mild to moderate diarrhea during the time their white-cell counts were elevated. Moderate irritability and some decrease in activity were noted in most patients. They were otherwise normal except for prior neurologic deficits that did not change during the epidemic. No splenomegaly, unusual lymphadenopathy or signs of respiratory infection were observed. None appeared dehydrated from the diarrhea. Approximately half the patients had slightly elevated temperatures, with a mean of 100.8°F by mouth.

General Laboratory Results

Serum from nine patients with lymphocytosis were tested for agglutinins to brucella, *Proteus OX-19* and tularemia and found to be negative. Heterophil-antibody agglutinins tested for 14 patients were negative.

Parasitologic examination of stools from 36 children revealed *Giardia lamblia* in 14 of 22 stools from the group with lymphocytosis and in five of 14 stools from contacts. Other parasites occurred with low frequency.

Stools from 20 of the 27 patients with lymphocytosis were cultured for enteric bacterial pathogens, and all were negative, as were all stools from contact children. Nine bacterial throat cultures collected from patients during their lymphocytosis were negative for *Bordetella pertussis* and other pathogens; all pharyngeal cultures from other children were negative.

Virologic Results

There were 36 viral isolations from 215 specimens tested. Fourteen isolates were from the lymphocytosis group, and 22 from the contact group. The rates of virus recovery from both groups were similar (17.5 and 16.3 percent respectively).

The most prevalent virus in both groups of children was similar to the Coxsackie A viruses but that did not appear to be one of the serotypes recognized in the official classification by the Committee on Enteroviruses. We cultured similar viruses from 20 stool specimens. These viruses were cultured from 20.7 percent of stools (six of 29) from patients with lymphocytosis and 26.4 percent of stools (14 of 53) from close contacts. The difference in isolation rates between the two groups is not statistically significant. All other viruses isolated were from throat and stool specimens and occurred in small numbers. Serums and buffy coats (28 specimens) yielded no viruses.

Because of the prevalence of the viruses that we designated as similar to Coxsackie A, more extensive investigation was done to characterize these 20 agents. All were isolated in HEp-2 tissue culture and had originally been cultured from stool specimens. The viruses caused neither cytopathogenic effects in primary monkey-kidney tissue culture nor clinical disease in suckling mice inoculated either intraperitoneally or intracerebrally; however, the cytopathogenic effect in HEp-2 tissue culture most resembled that of the picornaviruses, with rounding, shrinking and rapid detachment of cells from the monolayer.

All these viruses formed plaques on HEp-2 cells with the use of a double-overlay technic with supplementary magnesium chloride. The plaques that appeared between the fourth and sixth days continued to enlarge until the cell sheet degenerated. None of the hyperimmune serums to Coxsackie A (Types 1-22 and 24), Coxsackie B (Types 1 to 6), ECHO virus (Types 1 to 7, 9 and 11 to 30), or poliovirus (Types 1 to 3) neutralized the cytopathogenic effect of one representative virus (designated EVU-16) from this group. Hyperimmune ECHO virus Type 4 antiserum did not fix complement in the presence of this virus. Six of the 20 were further tested and were ether resistant, stabilized at 50°C by 1-molar magnesium chloride and resistant to inactivation at pH 2.9. One of these six was prepared for electron microscopy and had a mean diameter of 29 mμ. Intracytoplasmic crystalline arrays of virus-like particles were found intimately associated with glycogen in sections of infected HEp-2 cells. BUdR

failed to inhibit viral replication, demonstrating that the nucleic acid was probably RNA. This virus failed to kill or cause recognizable morbidity in suckling or adult mice, but microscopical sections of the suckling mice revealed generalized myositis of skeletal muscle typical of the histologic findings associated with Coxsackie A viruses. In addition, there was myositis involving the tongue. A tentative classification based on these findings placed the EVU-16 virus in the Coxsackie A group, type unknown.

Hyperimmune monkey serum was prepared against the EVU-16 virus. A complement-fixation titer of 1:1024 was obtained after a long immunization schedule, where as a neutralization titer of only 1:32 could be produced. Monkeys, rabbits and mice were unsuccessfully used to produce serum or ascitic fluid with good neutralizing properties. Because we were unable to prepare an effective neutralizing serum and because of the difficulty in preparing complement-fixing antigens from most of the low-titered isolates, serologic proof that these 20 viruses are identical is lacking. In addition, cross-neutralization tests between prototype enteroviruses and serum prepared against the EVU-16 isolate were not possible.

Serum specimens from patients with lymphocytosis and contacts were tested for complement-fixation and neutralizing antibodies against the virus similar to Coxsackie A EVU-16. In general, complement-fixation titers were much higher than titers of neutralizing antibodies, paralleling our observations in experimental attempts to inmunize animals.

Fourfold rises of neutralizing antibodies (Table 1) occurred in a significantly greater (p less than 0.05) proportion of patients with lymphocytosis than in contacts. Comparing the highest neutralizing-antibody titer attained in patients and contacts, we found that 76 percent of those with lymphocytosis had titers greater than 1:16, but only 28 percent of the contact group had titers above that level.

Table 1.—*Seroconversions (Fourfold or More) to EVU-16*

Group	No. of Paired Serums Tested	Seroconversions			
		Complement-Fixation Antibody		Neutralizing Antibody	
		No.	%	No.	%
Patients with lymphocytosis	26*	4	15.4	8	30.8
Patients without lymphocytosis (case contacts)	46	8	17.4	4	8.7

* Serum from 1 patient with lymphocytosis not tested for neutralizing antibodies.

In contrast, in complement-fixation tests the frequency of fourfold rises and the distribution of highest antibody titers were similar in lymphocytosis patients and contracts. We compared the highest complement-fixation antibody titers of patients and contacts with those of "control" serums from children at another institution. The mean geometric titer of serums from patients with lymphocytosis and their contacts was 1:83, whereas that of the "control" serums was 1:9. Only one patient with lymphocytosis had a complement-fixation titer less than 1:16.

Attempts to reproduce lymphocytosis were unsuccessful in three-year-old monkeys fed orally and inoculated intramuscularly with the EVU-16 virus. In mice that were inoculated intraperitoneally in the first 24 hours of life lymphocytosis did not develop, although similarly treated mice showed myositis. Adult mice inoculated intraperitoneally did not acquire lymphocytosis.

Discussion

The literature contains numerous reports of the clinical features of acute infectious lymphocytosis describing a spectrum of disease including asymptomatic illness, mild respiratory symptoms, diarrhea and aseptic meningitis with and without paralysis. In 1954 Scalettar et al. reviewed the epidemics in the United States. A more recent review by Crisalli and Terragna included descriptions of epidemics in Europe.

Olson and his colleagues investigated the etiology of lymphocytosis accompanied by the "pertussis syndrome" in children without isolation or serologic evidence of infection with *B. pertussis*. They succeeded in isolating four adenoviruses and suggested that his syndrome with lymphocytosis may be due to adenoviruses. Another report of "clinical pertussis" and lymphocytosis with post-mortem isolation of adenovirus from lung tissue has appeared to supplement this point of view.

The etiology of lymphocytosis unaccompanied by a pertussis-like illness has eluded investigators. Since most reported cases occurred before the use of tissue culture became widespread, few viral studies have been described.

Serologic attempts to associate the following viruses with lymphocytosis have been unsuccessful: mumps; lymphocytic choriomeningitis; eastern equine encephalitis; western equine encephalitis; St. Louis encephalitis; Japanese encephalitis; psittacosis; influenza A and B; and *Herpesvirus hominis*.

Serums from patients with lymphocytosis did not yield viral agents when injected into chick embryos, mice and guinea pigs. Pharyngeal secretions were likewise negative in check embryos and rabbits. Grabowska was able to produce a rapidly fatal disease in mice by intranasal instillation of pharyngeal secretions from patients with lymphocytosis, but she was unable to pass the virus into chick embryos or intraperitoneally in mice. Her patients, however, had hematologic findings more suggestive of infectious mononucleosis than of infectious lymphocytosis. Poliovirus Type 2 and a Columbia SK rodent picornavirus were isolated by v. d. Kley from the stool of one patient with mild neurologic deficits and lymphocytosis.

In contrast to the few positive findings in previous etiologic studies, we isolated nine separate virologic agents from patients studied during the time of the outbreak. Seven of the nine are common viral agents and were isolated in small numbers. Untyped adenoviruses, the eighth group, were isolated only in contacts and occurred with low frequency. In addition, complement-fixation titers were negative (1:8 or less) in 10 of 17 patients' serums tested against the group adenovirus antigen. It is unlikely that any of these eight viral agents is related to lymphocytosis.

The only virus appearing in large numbers was the one similar to Coxsackie A, which could not be identified with Coxsackie A hyperimmune serums tested. This virus was generally prevalent during the period that lymphocytosis was occurring in the nursery. The finding of this previously undescribed virus in high prevalence during the outbreak of lymphocytosis and the occurrence of rising neutralizing antibodies to this virus in a significantly greater proportion of the serums from patients than from contacts suggest that this agent may be etiologically related to lymphocytosis.

Since many children were excreting the virus similar to Coxsackie A, this agent had a high infection rate in the nursery, though lymphocytosis probably occurred only in a portion of those infected. This conclusion is based on the assumption that most of the cases of lymphocytosis occurring during this epidemic were detected. A pattern of disease similar to this has been described for other known enterovirus infections for which, as with poliomyelitis, infection may be more than 75 times as frequent as clinical illness.

The presence of neutralizing antibody to EVU-16 correlated well with a history of lymphocytosis. Complement-fixation antibody, however, is more difficult to interpret in view of the known broad heterotypic reactivity seen with this system within the Coxsackie A virus group. Thus, it is possible that high complement-fixation titers during this epidemic represented cumulative experience with a variety of enteroviruses.

Because of the isolation of a Columbia SK picornavirus in a case of lymphocytosis, and our failure to classify serologically the picornaviruses isolated in the present investigation, we compared the two viruses. The EVU-16 isolate differs from the rodent picornavirus in that it fails to kill mice, is resistant to inactivation at pH 2.9 and is not identical by complement-fixation tests.

Since lymphocytosis is often accompanied by eosinophilia, investigators have examined the possibility that intestinal parasites are etiologically related. Dunn demonstrated *Giardia lamblia* in a large number of his patients, but pointed out the well recognized high prevalence of this parasite in institutionalized children. Barnes et al. reported parasitic examinations of 12 stools from patients with lymphocytosis; two were positive for *Oxyuris vermicularis*. In the present study, giardia organisms were found in a greater proportion of the patients with lymphocytosis than in the contact group, but the difference is not significant (p greater than 0.05). The relation of this ubiquitous parasite to lymphocytosis remains unclear, warranting further investigation in future outbreaks.

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(The figures and references may be seen in the original article.)

THE IMPORTANCE OF THE PORTAL OF ENTRY IN CERTAIN MICROBIAL INFECTIONS

THE PRIMARY CUTANEOUS "CHANCRIFORM" SYNDROME*

J. Walter Wilson, MD, Dis Chest 54(1):43–48, October 1968.

Primary cutaneous (chancriform) coccidioidomycosis was delineated as a distinct entity in 1953 by Wilson, C. E. Smith and Plunkett. This collaboration began six years earlier when the patient first came under observation, but the report was withheld until we could be certain that the passage of time would not negate our opinion that the case was unique.

Subsequently this "chancriform" stage has been amply confirmed for coccidioidomycosis and has been shown to occur alone in some other potentially systemic fungal infections. For this form to develop, the causative organisms must be inoculated percutaneously in persons not previously infected in any tissue by the same microbe and who are sufficiently normal immunologically to be capable of developing locally a significant degree of resistance.

Nature usually does not take the trouble to invent multiple methods or mechanisms where one serves adequately. It seems logical, therefore, to believe that the processes by which animals resist different microbial diseases are fundamentally closely similar if not identical. In many respects they do not appear to be so to us at present, but probably this is because there are still great gaps in our understanding of the pathogenesis of these diseases, both individually as well as when compared with each other. I believe there is much to be gained through making careful comparisons, not always searching for differences to emphasize, as has been done so often in the past, but for immunologic similarities followed by all which may eventually lead to revelation of a fundamental pattern.

I believe the systemic fungous diseases have much to offer in the study of immunology, because the pattern seems to be less complicated than in viral or bacterial infections which have heretofore received the greater attention.

In this report, directed as it is to those interested especially in pulmonary diseases, the significance of an extrapulmonary portal of entry will be discussed for tuberculosis as well as for systemic fungous diseases, revealing considerable similarity in the pathogenesis.

In all of these diseases proved cases of this type are very rare, and would not in themselves be of much importance. The real value of the concept is that it indicates that cutaneous lesions of these mycoses much more often arise by dissemination from primary visceral foci than by direct primary cutaneous inoculation. This must be kept in mind, in spite of the fact that skin lesions are often the first indication of the presence of the disease, in order to avoid the selection of medical or surgical treatment of a type entirely inadequate because of its being directed toward the elimination of a disease wrongly considered to be sharply localized.

Schenck in 1898 firmly established one fungous disease, sporotrichosis, to be due usually to primary cutaneous inoculation. Subsequently, several thousand instances of this infection have been recorded, most of which have revealed a clinical picture so closely resembling the primary lesion of syphilis with its satellite lymph nodes as to deserve the term "chancriform." Very prominent has been lymphangitis, often with ulcerative nodules superimposed intermittently along the lymph channels, and a significant lymphadenopathy limited to the area drained. Some cases of sporotrichosis have presented skin lesions of different types, and there have been occasional instances involving viscera, with only vague evidence to indicate the portal of entry. However, apparently none has been observed to have been preceded by a well-developed chancriform primary cutaneous syndrome, indicating that this form can occur only in previously uninfected persons.

Not until Ghon in 1921 described the primary lung focus of tuberculosis in children which became known as the "Ghon complex," and Bruusgaard in 1926 pointed out its equivalent in the skin, was the chancriform stage of tuberculosis separated from other types. Stokes probably should have priority, but he included in his report some cases which were almost certainly not primary in the skin. Alderson reported in great detail a case of primary cutaneous inoculation in a finger, acquired at the autopsy table, but did not emphasize its importance in furnishing a clinical picture which could clearly designate the portal of entry. Bruusgaard added further clarifica-

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tion when he stated later (1934) that: "The question might well be raised, does the first invasion by the tubercle bacillus manifest itself by such definite morphologic and clinical signs that its portal of entry can be determined with certainty? To this the reply can be given that it does do so in a very large percentage of instances. The characteristic feature of a tuberculous infection occurring by inoculation into the skin of a previously tubercle free organism is the so-called primary complex, consisting of a primary tuberculous sore *plus* a definite and often very pronounced swelling of the regional glands. The spreading of the bacilli to the regional glands is frequently shown by a clearly marked lymphangitis. The dominating feature of the symptom complex is the great swelling of the glands, of acute onset with caseation. The primary sore may be of comparative insignificance." Michelson added an extensive discussion on this subject in 1935.

Historically it is interesting to recall that Koch in 1891 (undoubtedly influenced by Jenner's experience with vaccine for smallpox almost a century earlier) observed that the action of tubercle bacilli upon the skin of a normal guinea pig was entirely different from that in an already tuberculous animal. The former was slow and involved the regional lymph glands; the latter was more rapid and did not. This was really the basis of the "Koch phenomenon." It is therefore astonishing that the significance of regional lymphadenopathy in directing a diagnosis of primary cutaneous infection in tuberculosis was not more clearly understood almost immediately after his report.

Of course other forms of tuberculosis of the skin had been fairly well delineated many years previously. In 1886, Riehl and Paltauf described and named tuberculosis verrucosa cutis and definitely attributed it to intracutaneous inoculation. This soon became a well established entity, and usually continued to be ascribed to intracutaneous acquisition, but without the realization that if such were true the involved persons must have had visceral tuberculosis previously or the chancriform complex should have developed.

Somewhat more slowly lupus vulgaris became recognized as being a form of skin tuberculosis. Where it was seen to be spreading from the edges of a draining tuberculous sinus, or due to bacilli known to be reaching the skin by way of blood or lymphatic channels, it was obviously secondary to a primary visceral focus. In many cases the portal of entry of the bacilli was not designated. However, in several instances of each, the infection was attributed to intracutaneous inoculation, such as occurred during piercing of earlobes (Wild), vaccination, or various accidental wounds. Even more impressive were cases infected through the process of tattooing with needles moistened in the mouth of a tuberculous operator.

It was never pointed out, however, that these recipients must have had visceral tuberculosis previously, or the chancriform type of clinical picture would have developed. (Of course the incriminated traumas might not have always actually furnished the "original inoculation," but might have served only to furnish loci minoris resistentiae for secondarily disseminating bacilli to attack.)

Holt in 1913 assembled a group of cases of tuberculosis acquired by newborn infants during ritual circumcision performed by tuberculous rabbis. Although these were undoubtedly percutaneous inoculations into previously nontuberculous individuals, the chancriform syndrome was not produced. As Sulzberger and Goodman later confirmed these must be placed in a separate group because large numbers of virulent organisms were implanted in persons too young to have well-developed immunologic defense mechanisms. Instead of the relatively benign, well-resisted chancriform syndrome, these patients exhibited massive dissemination, 39 percent dying of military tuberculosis within two years.

Interspersed in the multitude of reports of tuberculosis of the skin during the first half century after its bacillary cause was revealed, there are hidden some instances of primary cutaneous chancriform infection. Some cases described very early were undoubtedly of this type, such as those reported by Knickenberg, Hallopeau, and Guizette. However, they were then classed as verruca necrogenica, tuberculosis verrucosa cutis or lupus vulgaris. The usual victims were persons brought into manual contact with tuberculous animal tissues such as physicians, dissecting room and mortuary attendants, and butchers.

It is also evident that some patients can exhibit both lupus vulgaris and tuberculosis verrucosa cutis in typical form simultaneously, indicating that the difference in the clinical pictures is due to a different degree or type of local tissue resistance. In these cases, the lymph vessels and regional nodes are not involved unless some other bacterial infection is also present in an acute phase. It is obvious that attempts to separate these various forms by dividing lines cannot have mathematical precision. There will be much overlapping, and transitional

forms. Many cases cannot be classified, and some will seem to violate all "rules" until many gaps in our present knowledge are filled. Nevertheless, most cases can be reasonably well understood.

Students of tuberculosis may be excused for a 50-year delay in delineating the primary cutaneous complex, for it occurred only occasionally. Schurman reported 0.44 percent in 889 cases. In Wichman's series of 2,000 cases of skin tuberculosis there were only 2 percent of this type.

However, it is surprising that it required so long for medical mycologists to recognize the chancriform syndrome in the systemic mycoses other than sporotrichosis. It would seem that Schenck's definitive report on that disease would have pointed the way. The delay was probably due to the comparative rarity with which this stage occurs. It has been estimated that 10,000,000 persons have been infected with coccidioidomycosis, while the total of primary cutaneous cases reported to date is less than 20.

The various systemic fungous diseases seem at first glance to present more differences than similarities, while actually the converse is true. The discrepancies have been emphasized principally because of two factors. First, we have not yet learned easy methods of separating the clinical consequences of tissue preferences which the individual species of fungi exhibit from those due to the host response. For example, we may recall that *Coccidioides immitis* tends to invade lungs, and to disseminate preferably to bones and skin; *Histoplasma capsulatum* prefers to live and grow intracellularly, and even intranuclearly, within the cells of the reticuloendothelial system; while *Cryptococcus neoformans* is equally desirous of selecting an extracellular location within the nervous system. Thus, we could not expect the clinical pictures resulting from their infections to be the same. However, whatever portions of the syndromes are produced by the immunologic response of the animal host should probably be closely similar in all three diseases.

The second confusing factor is that we have not always been certain that we were comparing these diseases in similar stages. It is here that the delineation of the chancriform syndrome in coccidioidomycosis has been particularly helpful. For example, until about 15 years ago it was accepted as fact that the inoculation into the skin of three different species of pathogenic fungi regularly caused three different clinical pictures. It was *thought* that *Sporotrichum schenckii* produced the chancriform syndrome already described, that *Coccidioides immitis* caused a subcutaneous abscess, from which the infection spread by hematogenous dissemination throughout the body, and that *Blastomyces dermatitidis* induced an extremely chronic, verrucous skin disorder, slowly spreading superficially for many years, but almost never disseminating internally.

These discrepancies were resolved by the discovery of several cases in which Coccidioides or *B. dermatitidis* were known beyond a doubt to have been inoculated primarily into the skin and in which the resulting syndrome was chancriform, practically identical with that in the common form of sporotrichosis, indicating that when the portal of entry was the same, the disease produced was similar. The original case of primary cutaneous chancriform coccidioidomycosis reported by Wilson, Smith and Plunkett was soon confirmed by another observed by Trimble and Doucette, and later by reports by Wright and Newcomer, Overholt and Hornick and Goodman and Schabarum. Winn has observed several more, as have Levan and Huntington. Experimental intracutaneous inoculations in monkeys have followed this pattern. The status of primary cutaneous North American blastomycosis tests on the reports of Schwarz and Baum and of Wilson and colleagues. Although few in number, these patients were definitely known to have been intracutaneously inoculated, and the study of them has led to the conclusion, supported by ever-increasing evidence, that many of the rest of the cases of these diseases in which the initial lesion appeared in the skin were nevertheless not due to inoculation at that point, but to dissemination from a previously unrecognized or subclinical primary infection elsewhere in the body, usually the lungs.

Curtis and Cawley and Curtis and Grekin reported a case of histoplasmosis which followed the same chancriform pattern. Tosh *et al* have reported another.

Baumgarten has reported a case which was clinically exactly like the usual form of lymphatic sporotrichosis except that *Nocardia asteroides* was the organism recovered by culture. Alarcon, Obadia, and Borelli have reported a similar case caused by *N. brasiliensis;* another was described by Rapaport, and a third by Moore and Conrad. Guy had reported a chancriform syndrome caused by Nocardia in 1922; the species was not identified.

Thus, the chancriform syndrome has now been observed (with little variation in the clinical picture) in infections resulting from four species of

pathogenic fungi and two Nocardia species when intracutaneously inoculated. Nevertheless it has not been reported to have occurred in several other systemic infections including cryptococcosis, actinomycosis, maduromycosis, South American blastomycosis and only doubtfully in chromoblastomycosis. In some of these it is likely that the chancriform syndrome never occurs, while it may occasionally do so in others under special circumstances. One reason may be the manner in which the various fungi grow in nature. *Sporotrichum schenckii* lends itself well to being inoculated percutaneously by growing as a closely adherent moist mat on thorny plants or wooden timbers, which can furnish thorns and splinters capable of inflicting wounds and leaving therein fragments of plant material containing many fungal spores. In nature, the spores are not easily released from the moist cultures, and are therefore not often air-borne. It is easy therefore to see why sporotrichosis is almost always acquired by primary cutaneous inoculation.

Conversely, Coccidioides and Histoplasma grow in and on soil as fluffy mats of thread-like hyphae, with spores so lightly attached and fragile that they blow away in the slightest breeze, making it easy to understand why they are seldom inoculated in any large quantity through the skin. The infections are therefore almost always acquired by inhalation. *Blastomyces dermatitidis* has been recovered from soil. Most of the systemic fungi not yet known to have a chancriform stage also grow in soil, including *Cryptococcus neoformans,* and the organisms of Mycetoma. The source in nature for *Paracoccidioides* brasiliensis is not known as yet, nor has it been proved for the fungi causing chromoblastomycosis, although species closely similar to the latter are known to grow on dead vegetation which could cause intracutaneous inoculation.

Baquero reported some evidence that the usual chronic cutaneous form of chromoblastomycosis, formerly assumed to have originated by direct cutaneous inoculation, may in reality occur by dissemination from a previously unrecognized primary pulmonary focus, as is now widely believed to be the case in North American blastomycosis and coccidioidomycosis. He has cultured the pathogen from bronchial washings in four such cases. There are some recorded cases which appear to have been somewhat chancriform, but not typically so. The fungi causing chromoblastomycosis are so closely allied to common air-borne contaminants that it is not always possible to differentiate them and the inhalation of either form might alter the recipient's immunologic reactivity enough to obviate the development of the chancriform syndrome when the pathogenic species is subsequently encountered intracutaneously.

Even if intracutaneous inoculation does occur, for the chancriform syndrome to develop it is also necessary that the organism is resisted rather strenuously by the normal patient's immunologic mechanism. Otherwise, the point of inoculation would be as inapparent as it is, for example, in malaria, trypanosomiasis and yellow fever. In the chancriform cases of coccidioidomycosis, North American blastomycosis and histoplasmosis, the degree of resistance has been high enough to result in spontaneous cure eventually, although months or even years were necessary. It is less perfect in sporotrichosis because most cases do not recover spontaneously; but it is still good enough to cause the infection to remain localized and to be cured easily by any of several drugs, which fail miserably when pitted against other less well resisted forms of that disease.

It is evident that the degree of immunity which accompanies this syndrome need not be complete, and should not be relied upon always to achieve spontaneous cure, although it will be helpful. There are good illustrations in tuberculosis, such as a report by Akerberg of the primary cutaneous complex which included a case which disseminated four years later.

One of Winn's cases of coccidioidomycosis disseminated to the central nervous system. Although his patient did develop the lymphatic involvement characteristic of the primary cutaneous chancriform type of infection, she was negative to the intradermal test with coccidioidin 1:100 and had a complement fixation titer with coccidioidin of 1:32 when first tested, which clinicians have learned to interpret as a poor prognostic combination. Winn therefore quite properly instituted early vigorous treatment with amphotericin B.

In fact, most of my recommendations derived from the study of the chancriform type of infection have been intended to warn clinicians that they should not accept cutaneous lesions of nonchancriform types (which are the first evidence of infection) as indicating that the disease is localized enough to be subject to local therapy alone. Even when typically chancriform, I would advocate drug therapy for all such cases, if it were not for the fact that the best drug, amphotericin B, is not as safe nor as reliable as desired. Only if all other signs and symp-

toms also point toward a benign course should specific drug therapy be withheld.

These immunoallergic considerations may explain the failure of the chancriform syndrome to occur in *Cryptococcus neoformans* infections, for this organism is apparently not usually pathogenic for immunologically normal persons. Those abnormal ones who do become infected do not respond immunologically sufficiently to produce the chancriform syndrome. Perhaps this also underlies the lack of the chancriform syndrome in individuals with South American blastomycosis (paracoccidioidomycosis).

In conformity with all of the above facts, and directed particularly by what happens when tuberculosis is contracted percutaneously after previous pulmonary involvement, is the speculation that perhaps the usual chronic verrucous forms of chromoblastomycosis, North American blastomycosis and perhaps coccidioidomycosis actually can result from cutaneous inoculation, but only in individuals previously altered in their capacity to react immunoallergically by having previously inhaled the fungus and acquired the infection in the lungs. Perhaps also it could be predicted which patients would not produce the chancriform picture by revealing them to be sensitive to skin testing with specific antigens derived from such organisms. In only two of the reported cases of chancriform coccidioidomycosis was the previous status of the patient with regard to the specific skin test known, and both of these had failed to react, indicating that they had had no previous infective contact with *C. immitis*. Previous reactive status was not known in any of the cases of chancriform North American blastomycosis. Perhaps a chronic verrucous form would result from intracutaneous inoculation of these organisms into persons already skin-test-positive to the specific antigens.

In this regard, the case of sporotrichosis reported by Carr, *et al* is instructive because it lasted 21 years while it duplicated exactly the chronic verrucous slowly spreading infection so typical of North American blastomycosis and chromoblastomycosis and sometimes seen in coccidioidomycosis. Thus, each disease usually takes its *favorite* course, but with the right set of circumstances can probably duplicate any of several clinical syndromes. In determining the result, the portal of entry of the organisms is one important factor.

Summary

The inoculation for the first time of many species of microbes capable of causing systemic infections through the skin of persons capable of developing locally a significant degree of specific immunologic resistance results in what is approximately termed the primary cutaneous complex or syndrome. The resemblance to primary syphilis is so striking that the word "chancriform" has also been used.

Clinically the initial papule soon becomes a relatively painless ulcer, lymphangitis develops, often with ulcerative nodules distributed along the vessels, and lymphadenopathy where this drainage reaches. There is a strong tendency toward eventual spontaneous healing of this entity, although systemic spread may take place.

Sporotrichosis in its common form was established as chancriform in 1898, tuberculosis in 1926, and coccidioidomycosis in 1953. Since then, this concept has been extended by similar cases in North American blastomycosis, histoplasmosis and infections with *Nocardia asteroides* and *N. brasiliensis*. In some of the remaining deep fungous infections it may occur under special circumstances; in others, it may never occur.

This stage is rare in most of these diseases, principally because the organisms do not exist in nature in a form appropriate to cause infective puncture wounds. This rarity should alert the clinician to realize that in contrast most cutaneous lesions in these disorders result from dissemination from a visceral focus and are therefore not sufficiently localized to be treated by local therapy alone.

(The references may be seen in the original article.)

GASOLINE-SNIFFING BY AN ADULT

REPORT OF A CASE WITH THE UNUSUAL COMPLICATION OF LEAD ENCEPHALOPATHY

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An adult chronically sniffed gasoline vapor, and lead encephalopathy developed. The diagnosis of organic lead intoxication was established in this patient, who presented clinically with a chronic psychosis. The unique complication of lead encephalopathy, with the unusually high blood lead level, is explained by the methodical and intense inhalation of partially evaporated gasoline. Recognition and treatment of lead encephalopathy is important for future cases.

Deliberate, prolonged, and repeated self-intoxication by the inhalation of the vapor of commercially available leaded gasoline has been described in 16 adolescents. Although gasoline-sniffing has not been reported to cause lead encephalopathy, this potentiality has been recognized. This case appears unique because, apparently, it is the first published instance of gasoline-sniffing by an adult in whom lead encephalopathy developed, which, in itself, is an unusual occurrence in adults.

Report of a Case

A 41-year-old woman was admitted to the University of Maryland Hospital on Oct 10, 1966, with the complaint that she was "losing her mind." Eight months prior to admission, the patient began the daily practice of sniffing leaded gasoline for a total of three to four hours each day. She accomplished this by placing her nose into the opening of a 1-gal can which contained approximately 2 qt of gasoline and, for a period of several hours, she inhaled in an intermittent manner, so that unconsciousness was avoided. During each episode of sniffing, she hallucinated, described the feeling of "being happier" and "being in another world," and was often observed conversing with the gasoline can. Four months prior to admission, the patient complained of nervousness and vague abdominal pains, with occasional nausea and vomiting. Anorexia developed, with a subsequent 20-lb weight loss. One month prior to admission, the patient began to hallucinate between episodes of gasoline-sniffing and stated that she "was being used for a brain experiment," and that "men had placed radar in my house to spy on my thoughts." She frequently had terrifying dreams and would awaken, screaming that blood was oozing from her scalp because doctors were operating on her brain. The patient began to exhibit loss of recent memory, became progressively more anxious and suspicious, and showed fluctuating levels of awareness. Several days before admission, she was restless, talked incessantly, and expressed great fear that someone was trying to kill her. Concerned relatives brought her to the hospital.

Physical examination showed a well-developed woman in no acute distress. Temperature was 98.8 F (37.1 C); the pulse rate, 105 beats per minute and regular; and the respiration rate, 15 per minute. The blood pressure was 130/70 mm Hg. Results of the general physical examination were normal. The neurological examination showed an alert, cooperative, oriented patient whose fund of general information was considered normal. Her remote memory was normal, but her recent memory was impaired. She could remember only two of four cities for five minutes and could not retain new facts for ten minutes. She was unable to perform simple mathematical problems, though she had had 11 years of formal education. She could not subtract serial sevens from 100 beyond the first step. Her abstract thinking was deficient, and her intellectualization of proverbs was inadequate. The patient was apprehensive, irritable, and agitated, with intermittent tremulousness. She was garrulous and frequently expressed delusional ideas. She was easily excited and rapidly vacillated from euphoria and elation to anger and depression. Cranial nerve examination results and speech were normal. The gait was slightly ataxic. Results of the motor system examination were otherwise normal, except for the presence of a fine tremor of the hands and fingers which was not altered by activity. The deep-tendon reflexes were hyperactive but symmetrical. There were no pathological reflexes. Coordination was normal, except for slight dys-

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metria of the upper limbs. Results of sensory examination were normal.

The blood lead values in this patient were all abnormally elevated. On admission, the fasting blood glucose level was 113 mg/100 ml, and the blood urea nitrogen level was 10 mg/100 ml of blood. The Venereal Disease Research Laboratory test for syphilis was negative. The protein bound iodine level was 5.7 μg/100 ml. Results of the urinalysis were normal. The stool was negative for blood. The white blood cell count was 6,300/cu mm, with a normal differential; the hematocrit reading, 26 percent; and the hemoglobin level, 8.2 gm/100 ml. The reticulocyte count was 0.8 percent. The mean corpuscular volume was 67 cu μ; the mean corpuscular hemoglobin, 21 $\mu\mu$g; and mean corpuscular hemoglobin concentration, 32 percent. The serum iron level was 7 μg/100 ml, and the serum binding capacity, 499 μg/100 ml. Roentgenograms of the chest and skull were normal. Hemoglobin electrophoresis showed hemoglobin A; the sickle cell preparation was negative; results of the Coombs test were negative; and the bone marrow was compatible with iron deficiency. Lumbar puncture showed normal pressures, with a clear colorless fluid that contained 60 erythrocytes and no leukocytes. The spinal fluid glucose level was 88 mg/100 cc, with a simultaneous blood glucose level of 138 mg/ 100 cc. The protein level was 58 mg/100 ml, with a nonreactive Wasserman and a mastic that was negative in all dilutions. Spinal fluid cultures were negative. An electrocardiogram was normal, except for the presence of three premature atrial contractions. Three lupus erythematosus preparations were negative. On the seventh hospital day, the 24-hour urine porphyrin excretion level was normal (coproporphyrin, 101 μg; uroporphyrin, 15 μg; porphobilinogen, less than 2 mg). On the eighth hospital day, the 24-hour urine coproporphyrin excretion level was 83 μg. On the 11th hospital day, an electroencephalogram was mildly abnormal, with a background that contained excessive fast frequency activity and a mild amount of diffuse slow activity. Results of the liver function tests, which included the serum albumin, globulin, cholesterol, bilirubin, alkaline phosphates, thymol turbidity, and prothrombin time, were all normal. Results of the serum electrolytes, calcium, phosphorus, uric acid, creatinine, and three-hour oral glucose tolerance test were all normal. On the 21st hospital day, the hematocrit reading was 35 percent; the hemoglobin level, 10.1 gm/100 ml; and the reticulocyte count, 3.4 percent. (The patient had been treated with ferrous sulfate, 900 mg/day in divided dosage.)

During the first two weeks in the hospital, the patient was anxious, suspicious, and restless. She was often irrational and wept readily during her frequent periods of depression. She exhibited impulsive behavior, at times becoming so combative and violent that she had to be forcibly restrained in bed. She had many hallucinations, illusions, and delusions each day and would often awaken from fitful sleep, screaming because of terrifying dreams. During the second and third weeks of hospitalization, the patient received two courses of edetate calcium disodium ($CaNa_2$ EDTA) therapy. Each course of edetate calcium disodium consisted of 1 gm in 500 cc of 5 percent dextrose and water administered intravenously over a two-hour period, twice daily for five days. By the third week of hospitalization, the patient began to improve, was more easily managed, and did not require restraints. Her agitation was less severe, the hallucinations, illusions, and delusions diminished, and the mild ataxia, upper-limb dysmetria, tremor, and memory improved. Throughout the first two weeks, chlorpromazine hydrochloride in divided doses of 500 to 1,000 mg per day (average of 800 mg/day) had to be given to the patient. This medication was gradually reduced during the fourth and last week of hospitalization and discontinued several days before discharge. At the time of discharge, on the 29th hospital day, findings of the neurological examination were normal, and no medication was required.

Five months after discharge, the patient stated that she had discontinued the practice of gasoline-sniffing and had returned to work. She offered no complaints, and findings of the physical examination were normal. She regained the weight that she had lost. Hemoglobin level was 11 gm/100 ml, and the hematocrit reading was 37 percent. The value of the blood lead was approaching the normal range.

Comment

The diagnosis of organic lead (tetraethyl lead) intoxication is established when there is a reliable history of adequate exposure to organic lead, valid laboratory evidence of absorption of toxic quantities of lead, signs and symptoms characteristic of organic lead intoxication, and appropriate response to therapy. Inhalation of the vapor of gasoline, as commercially available, was associated with a potentially toxic degree of lead absorption, though clinical symptoms of lead intoxication were absent.

Authenticated cases of tetraethyl lead intoxication have occurred under unusual circumstances where the concentration of tetraethyl lead became dangerously high due to evaporation of leaded gasoline and where exposure continued for a period of weeks to months. The concentration of lead compound can reach hazardous levels only after evaporation of gasoline. Since the patient reported in this communication made only a few purchases of leaded gasoline, which she continued to sniff with the can open for many hours a day, every day for eight months in the manner described, it is logical to assume that evaporation took place.

There was valid laboratory evidence of absorption of toxic quantities of lead in this case. Although blood lead values have been only slightly elevated in persons with tetraethyl lead intoxication resulting from industrial accidents, these persons had exposure for six weeks or less. We believe that this patient's unusually intense, methodic, and prolonged inhalation, coupled with the fact that the gasoline evaporated, resulted in the markedly elevated blood lead values, with subsequent development of lead encephalopathy. The possibility of inorganic lead intoxication in this patient is unlikely, because there was no history of exposure to inorganic lead, and she did not have an abnormally elevated 24-hour urine porphyrin excretion level.

An organic psychosis is seen in lead encephalopathy and is especially common in tetraethyl lead intoxication. This patient presented with an organic psychosis, which included fluctuating levels of consciousness, periods of confusion, impairment of memory, hallucinations, delusions, and illusions. Although an organic psychosis can be seen in many other types of intoxication, as well as in common conditions, such as cerebral hemorrhage, syphilis of the central nervous system, uremia, eclampsia, hypertensive and alcoholic encephalopathy, and hyperthyroidism, there was no evidence of any of these entities in this case.

The few adults with lead encephalopathy who have been treated with edetate calcium disodium were reported as having rapid symptomatic relief either at the onset of therapy or several days later, with complete clearing of signs and symptoms within two or three weeks. This patient showed marked improvement two weeks after the onset of therapy, with complete recovery a week later. The blood lead values in this patient decreased coincidentally with the administration of the chelating agents and gradually declined after discharge.

In addition to lead encephalopathy, this patient had some signs and symptoms of chronic gasoline intoxication, such as anorexia, weight loss, fatigue, insomnia, nervous irritability, memory loss, mental confusion, depression, and tremor. She had an organic psychosis, however, which apparently has never been described in cases of chronic intoxication, except during the few hours immediately after each episode of inhalation.

Considering the universal availability of gasoline, its low cost, and the small amount of vapor required to produce intoxication which has some resemblance to the acute effects of ethanol, it is surprising that apparently so few instances of gasoline sniffing have been reported. This case illustrates the danger of prolonged inhalation of the vapor from evaporated gasoline because of the possible complication of lead encephalopathy producing a chronic psychosis. Recognition of future cases is important, since early treatment of lead encephalopathy seems to be effective and, therefore, indicated in order to protect the patient from further ill effects of lead and to hasten recovery by increasing the excretion of lead in a nontoxic form.

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Determinations of blood lead were done by the Baltimore City Branch, Bureau of Laboratories, Maryland State Department of Health.

Generic and Trade Names of Drugs

Edetate calcium disodium—*Calcium Disodium Versenate.*

Chlorpromazine hydrochloride—*Thorazine Hydrochloride.*

(The figure and references may be seen in the original article.)

MORE . . . ON SPEAKING TO PATIENTS

Robert H. Moser, Med Arts Sci 21(2):35–43, Second Quarter, 1967.

How does the PHYSICIAN *human being fulfill the responsibilities of integrity, dignity, and well-being in interchange with the person who is the* PATIENT?

The traditional relationship between doctor and patient has come upon strange and stormy times. The climate of public reaction to the physician has turned somewhat chill. The classic portrait of the clinician brooding in elegant solitude at the bedside has been displaced by less admirable images. One need but turn on the television at an unfortunate moment to realize how far our star has descended. The pressures of modern society have converged to a degree that the equanimity so prized by William Osler seems unobtainable.

However, we are not without sin.

At times, it seems that the physician has lost mastery over his profession, has become overwhelmed by the expanding technology of medicine, and has sought escape by relinquishing some of his traditional stature. In the press of time, he is turning more to the laboratory to seek answers that should be obtained by those outmoded instruments, the history and the physicial examination. With increasing frequency the practitioner finds himself in the untenable position of using fashionable new drugs of uncertain virtue in place of older, more familiar therapeutic "friends" whose attributes and foibles he knows well. And finally, perhaps the most unfortunate by-product of current methods of medical education and practice—some of us have forgotten how to relate to the patient. The staggering curriculums imposed by our finest academic institutions tend to produce physicians who are so completely preoccupied with the complex liturgy of molecular biology, biochemistry, and pathophysiology that they tend to look upon the patient as a curious vessel for the containment of interesting pathology. In all echelons of medicine, there is less time, less inclination to reflect upon *the patient as a person.*

All that I have said up to this point sets the background for the subject of this discussion—*the production of iatrogenic disease* by the words and actions of the physician, or "psycho*semantic* disease."

It would seem that the image of the physician, having evolved through the centuries, preserved and nurtured by the proper indoctrination of succeeding generations of medical students, by now ought to be well defined. In a general sense this is true. Each physician is bequeathed a "personality template" by his predecessors in medicine. From this point, it becomes the responsibility of the individual to develop his professional personality. If the physician is aware that his very demeanor and mannerisms in patient confrontations are a critical therapeutic tool, he must realize that he cannot depend solely upon the abrasive action of years of practice to shape and polish the facets of his professional image. He must devote continuing, objective, self-analytical thought to the maturation of his medical personality.

To illustrate this concept, this discussion will explore the area of the psychological impact of the words and actions of the physician in the production of iatrogenic illness. (Parenthetically, one could easily expand from this concept to reflect upon investigations purporting to prove the therapeutic efficacy of drugs or surgical procedures. One often wonders whether such studies have been weighted positively or negatively by the personality of the individuals conducting the study.)

The patient-doctor confrontation represents a tableau that has been re-enacted through the ages of medical history. The years of training, the self-discipline, and the individual image of the physician suddenly converge to a focal point in that "moment of truth" when the patient sits across the desk and awaits the fateful words of diagnosis and prognosis. The patient is acutely sensitive to all things relating to the physician. Every word, expression, bodily movement, vocal tone, inflection, and even the order of presentation of material is charged with portent.

The physician who fails to sense the drama of this situation falters at a crucial point in his relationship with the patient. He limits his capability to help the patient despite all other qualifications of training, experience, or desire. At this moment the power of the physician-image is at its apex; he is in a position of enormous authority. He is virtually omnipotent, whether he likes it or not. The good physician will be fully aware of his role. The patient is seething with emotion—he fears the worst,

and hopes for the best. It is a moment of painful ambivalence.

The interchange between doctor and patient from this point is modified by many things. The physician must be alert for evidence of anxiety that is out of proportion to the situation. Disproportionate responses may be related to factors with origins rooted deeply in the past. This would include such things as recollection of previous severe illness, relationships with other physicians, undue preoccupation with the body and its functions, memories of severe illnesses in friends or relatives, fearfulness about loss of income, and fear of death. Thus the patient brings his individual constellation of anxieties, fears, prejudices, and conditioned responses to this confrontation.

And what of the physician? He may have doubts and misgivings about what he must say to this patient, whose personality may annoy or charm him. He may be tired, frustrated, bored, distracted, or preoccupied with problems of his own professional and personal life. He may be acutely worried about other patients. Nevertheless he must strive to shed this burdensome mantle; he must be acutely aware of his intellectual and emotional posture as he addresses this patient. The physician must not succumb to the temptation of deriving pleasure from his position of power. He must remain professionally objective, humbly aware of his fallibility, yet alert to avoid transmitting any sense of indecision to the patient.

There is still another aspect of this relationship that may become a source of difficulty. The physician may resent the everlasting pressure of being "depended upon" by the patient. It is enervating to be the "eternal rock," the bottomless pool with infinite capacity for compassion, never displaying a ripple on the surface. At times it becomes extremely uncomfortable, even frightening, to be so important to another human being.

How may we best proceed to impart information to this patient, guided only by the principle, "What is best for him?" We must discuss his medical situation without increasing normal fears or arousing neurotic anxieties, without creating new symptoms or exacerbating old ones.

The alert physician will be mindful that patients frequently fail to comprehend what is being said. A troubled, distracted patient may hear words without meaning. Even if he indicates comprehension, frequently the message is distorted, the meaning garbled. How often have we presented information with care and seeming clarity, only to discover to our dismay that we had been partially or completely misunderstood? How often have we observed a sick patient seize upon a single phrase, become preoccupied with that specific information, and forget all else? The frightened patient may quote out of context, delete all modifying shades of meaning, or unintentionally distort what has been said. Often the conclusions contrived are shockingly dissimilar to what we had hoped to impart.

How are we best able to help without adding an iatrogenic burden? A primary step is to state the message clearly, simply, concisely, and unequivocally, but with gentleness and kindness.

The properly oriented physician will have evaluated the intellectual and emotional capability of his patient. He cannot demean the mature, well-educated patient by discussing his illness in soothing monosyllables that smack of intellectual condescension; nor can he offer bland, childlike generalities. In the opposite vein, the physician cannot cloak his answers in medical mumbo jumbo that will leave the less perceptive patient confused and frightened. It is a grievous sin for the physician to descend to incantation of our catechism of Greco-Roman medicalese. The patient may sit and listen, not comprehending, but too proud to confess his "ignorance" as he conjures up frightening images built upon the few familiar phrases that do penetrate.

The physician must avoid communication difficulties. He is obligated to insure that neither his own semantic inadequacies nor the patient's lack of attentiveness or comprehension are permitted to interfere with the transmission of the message. Evasiveness will frighten and alienate the intelligent patient, since he fears the physician is not being frank because of the gravity of the diagnosis. He may react by interpreting the lack of candor as insecurity or even incompetence on the part of his physician.

If, as the result of a thorough diagnostic work-up, one is convinced that the patient is indeed well, this is the movement for a flat, dogmatic statement devoid of equivocation. "Mrs. Jones, I have studied you completely, and you have no disease." An explanation of symptoms is certainly in order. If symptomatic therapy is indicated, a clear explanation of the purpose of the medicine must be afforded.

However, if the physician is uncertain about the diagnosis, he must advise the patient that further study or consultation will be necessary and that no diagnostic or prognostic conclusion can be drawn at this time. The simple, honest statement, "I am still not positive about the diagnosis, but I have already

eliminated many serious possibilities," is one which the average patient can accept.

What the physician must *not* do is fall prey to sins of pride or hurry or vexation and charge the patient with the ominous admonition, "I can't find anything wrong with you, but check back with me in a few weeks." Another distressing gambit is the portentous expression, "Take it easy and let me know if it gets worse or anything new develops." This is the seed whence springs the thorn tree of iatrogenic disease.

If the physician entertains any vague doubt that the meaning of his words has been misunderstood, he must pursue this point. He should advise the patient to call by telephone in a few days as a matter of routine communication, and at this time he should ask the patient to repeat what he understands of the antecedent conversation. This "second look" communication affords another opportunity to restate the evalution and clarify any misunderstanding.

Most patients will accept the truth readily when it is presented in a candid, clear, yet sympathetic manner. However, in that rare instance when the physician is convinced that a straightforward answer will cause emotional damage, he must arrange that a face-to-face meeting does not occur at this time. The problem should be discussed with responsible, mature immediate family members who are given the unvarnished facts. This dialogue may determine what is to be told the patient.

However, the ultimate decision resides firmly in the hands of the physician. It is a moment that requires insight and compassion in the highest tradition of the physician's art. This is oversimplification, to be sure. In the area of malignant disease, there is no distinct pathway to follow. A great deal has been written about such communication but guideposts are lacking. Each case is different, and thoughtful appraisal of the psychologic composition of patient and family is mandatory.

For the patient with a severe diagnosis and limited prognosis, the road ahead should be straight. Perhaps it will not be pleasant or comfortable, but it should be unobstructed and never dead-ended. The advance of medical science is too rapid for any physician to pontificate and set a time limit on the life of the patient. The words and expressions of the physician will be endlessly ruminated as the patient sifts for hidden meaning. If some bright, simple word of truth cannot be cleared through the tangle of semantic underbrush, the physician has failed. The iatrogenic disease created may disable the patient far in advance of his organic process.

Now let us turn our attention to another area of doctor-patient interface.

A great deal has been written about techniques and etiquette of ward rounding. In the teaching hospital or private hospital work rounds and/or teaching rounds occupy a significant portion of the day. Usually they are the focal point of contact between physician and patient. For the person confined to bed, it may be the only moment of communication. The importance to the patient of this brief interface cannot be overemphasized; it is critical for the physician to appreciate this fact and respond accordingly. The conduct of rounds may certainly affect the psyche of the patient; it may determine the future course of patient-physician rapport. It can be helpful or harmful; it may exert a significant influence on the outcome of the total therapeutic endeavor.

Just for a few facetious moments, let us present a vignette of what can happen in a big, busy teaching service—with *you* playing the role of the bright insurance salesman admitted with abdominal pain.

The scene begins with *you* at a supreme psychological disadvantage. You are supine, uncomfortable, vaguely worried and unable to find any buttons on your hospital gown. The "Roundsmen" gather quietly. They tower above you. Unsmiling, austere, they are bedecked in their ceremonial costumes. The long white coat and that inevitable talisman of power and mystery—the stethoscope—are in overt evidence. Roundsmen are invariably tall (especially, when you are looking upward), always grave, and perhaps (most terrifying of all) they even seem a trifle sad! Usually you are hopelessly outnumbered four (+) to one. The cherubic one (you have identified him as the Intern, since he was the first to perform The Physical Examination Indignities) begins to speak. The language is alien; vaguely you sense that *you* are being discussed. No, that is not quite correct; *your case* is being discussed. Still, you are not quite sure, since no one has acknowledged your presence. Of course, you have not been introduced to the grim strangers who now swarm about you and are discussing you so dispassionately. You could just as well be on Mars.

Now, you are no Rhodes scholar, but you have always considered yourself reasonably intelligent; you always thought that you were fairly sensitive; and you are not banging on death's door (you thought!). But you are about to become terrified or angry. As the impersonal dialogue flows over your inert form, you feel a peculiar kinship with the biological specimens you have seen in petri dishes, or with the

pithed amphibians impaled on dissection boards; you sense an affinity with the stuffed mastodons at the Smithsonian. And perhaps (if your disease is sufficiently curious or exotic) you may be fortunate enough to evoke enthusiasm in your audience comparable to that stimulated by pop art or a rare Etruscan jug.

At last you are jarred from your uneasy reverie by a voice. It is the older, Doctor Gillespie-oid type. "Mr. Smith [they do know your name!], did you ever have exposure to SYPHILIS [or it could be tsutsugamushi or boiled tungsten filaments]?" You hastily look to your roommates to see if anyone overheard.

This Present Indignity is impertinent, embarrassing, and you do not see its relevance . . . but it may be legitimate. You shrug and mutter a negative answer. The response from the White Coats is a cold, expressionless vertical motion of the assembled heads . . . assent. (Thank heavens it wasn't a side-to-side movement.) A few more moments of unintelligible gibbering . . . still transacted over your prostrate form. This gibbering is interrupted by a swift, unannounced exposure of your naked chest, following rapidly by the laying on of uninivited hands (usually ice cold). Next, the stethoscope (usually rushed in for the occasion from the ward refrigerator) is placed on the chest.

After the examination, which was disastrously complete (say what you will, old Gillespie is thorough!), the bed curtains are left half opened . . . the bed, which had been cranked flat, is left that way . . . and of course your hospital gown is draped over the foot of the bed, a tantalizingly painful two inches out of reach. (I am told the ritual with female patients may not be dissimilar; nurse attendance is optional; usually the bed curtains are drawn; sometimes a towel is placed back over the breasts during the abdominal examination—but not always.) Thus you have experienced the Indignity of the Public Examination, the hospital version of theater-in-the-round.

The next scene is from "East Lynne;" it is done with stage whispers. This may be performed in several ways, but, as is common to all plans, the patient is tacitly ignored. Doctor Gillespie is discoursing at length about some disease (a trifle pompously, you think). You cannot be exactly sure if it is *your* disease, but you catch a few familiar words that make you think so. If you are clever, you will lie there in rocklike immobility and feign sleep or death—it matters little, since they would not notice now.

They are "finished" with your body and the dialogue is about to begin. If you are observed to be interested and listening, they will move away and talk more softly. Sometimes they will pat you on the head and tell you that all the horrible things they are about to say have nothing to do with your case. But you are clever; you smile and eavesdrop. The conversation chills your marrow. You learn that (1) your diagnosis has not been established with certainty, (2) the treatment was probably premature, was perhaps dangerous, and may even obscure the true diagnosis, (3) the other possibilities (that were not even considered by cherubic Intern and tired Resident!) are more ghastly than your wildest fantasies, (4) you must undergo a new series of tests, and they sound uniformly painful and dangerous and expensive. Then, straining your ears, you hear, "I think he probably has—" But the jig is up. They catch you listening—and move out of earshot!

You have now suffered all the classic ward rounds Indignities. Your good humor and composure are shattered; you are left a trembling, hostile lump of clay. You have been ignored, publicly undressed, discussed, embarrassed, argued over, auscultated (not to be confused with listened to), prodded, thumped, and left lying flat on your back with your gown out of reach. And your belly still hurts—just as it did when you were admitted. And all this was done without so much as a "by your leave," a kind word, or a genuine smile.

Facetious? Of course, but not too far removed from the actual conduct of rounds I have observed in many teaching institutions. Rounds can be therapeutic. They should be designed to impress the patient with these facts: (1) The ward officers are *his* doctors; they are interested in *him*— *his* family, *his* job, *his* problems, and *his* illness. (2) Rounds are an opportunity to bring the special talents of the staff to bear on *his* case; he is advised that today the chief (or the cardiologist and/or the gastroenterologist and/or someone else) will be around with his staff to see him personally.

The rules for the conduct of rounds are simple; they are based on common sense, good manners, and concern for the emotional and physical needs of the patient.

1. Always regard the patient as a person; he is the *most* interested participant in the bedside dia-

logue. He must be introduced to his visitors. A handshake with the chief is appropriate (if feasible).

2. All discussion between physicians should be conducted with the listening patient in mind. Any areas of disagreement about physical findings, diagnosis, and management should *not* be discussed at the bedside. Above all, the opinions and decisions of the ward officers should never be demeaned by the staff. This includes innuendo or use of nomenclature considered "beyond the comprehension" of the patient. All such criticism should be delivered behind closed doors, after rounds, over lunch.

3. The patient should never be depreciated or embarrassed. Proper decorum in examining female patients is especially important (forensically and humanely). I have seen sick, tough old prostitutes on the public wards glow with unspoken gratitude when treated with tenderness and respect.

4. The patient should never be alarmed by conversation or bedside procedure. He should be advised as to what is being done and why. He should never be left perplexed and frightened by incomplete or incomprehensible medical mumbo jumbo. When the physicians depart, the patient should be left with a feeling that the entourage was interested in *him* (as a person), that it has been a productive visit, that "his doctors" have been doing a fine job, and that all of the talent available in the hospital is being brought to bear on his problem.

It takes so little to make ward rounds an exciting educational experience for the staff—and a satisfying therapeutic adventure for the patient. The Golden Rule never gleamed more brightly.

Finally, there is another area needing brief comment: the peculiar patois of the house officer in his communication with the other physicians. I find distressing and annoying the practice of using a descriptive word in the sense of a noun to refer to the patient as he is affected by his disease. Particularly offensive are expressions such as *lunger, leper, syphilitic.* Perhaps less so, although I don't know why, are references to the patient as *a cirrhotic, diabetic, cardiac,* or *hypertensive.*

I guess it is the depersonalization, the dehumanization that is disturbing. Such slipshod spoken language (sometimes it is even written) suggests a failure to regard the patient as a person. It would seem that he is still regarded only as a curious repository for a disease. How humiliating—how devastating to morale—for the patient to realize that he is held in such lack of esteem as a human being.

This is an exaggeration, of course. Most house officers and most physicians are kind people and would be dreadfully upset to be considered thoughtless or callous. Yet this type of jargon has become an unfortunate convention among us. It should be eliminated from the vocabulary of the thoughtful clinician.

In conclusion, if one could summarize in a sentence *how to speak to patients,* it would be to paraphrase the Golden Rule: "Treat your patient as you would like to be treated yourself."

COMBINED BURN THERAPY UTILIZING IMMEDIATE SKIN ALLOGRAFTS AND 0.5% $AgNO_3$

John F. Burke, MD, and Conrado C. Bondoc, MD, Boston, Arch Surg 97(5):716–721, November 1968.

During the last few years, the use of several topically applied antibacterial substances has been shown to provide an approach to satisfactory control of burn wound sepsis. Clinical experience has shown, however, that even with successful control of surface infection, the overall status of the extensively burned patient remains precarious until skin coverage is accomplished. It appears that the metabolic demands inherent in maintenance of homeostasis and in repair of damaged tissue, if carried on over a long period of time, may approach a magnitude with which the host cannot cope. Therefore, the rate at which the burn wound is closed is a primary factor in the overall treatment of the burned patient.

In order to avoid long periods of stress produced by a large open burn wound, a number of attempts have been made to produce a suitable synthetic material which would provide a temporary skin substitute. Clinical success has yet to be achieved. At this time, the only successful means of providing a

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physiologic "skin surface" which will reverse the extraordinary metabolic demands on the burn patient is the use of skin itself. There is good reason to believe that for the period prior to sensitization and rejection, split skin allografts (homografts) act in the same physiologic way as autografts. In the late stages of therapy, considerable experience in the use of these allografts as temporary cover for areas of full-thickness skin loss has been gained. Although this may be life saving, the late use of allografts to cover open areas following slough separation in full-thickness skin loss leaves much to be desired. This type of skin closure is but a temporary covering to be rejected by the patient with the development of sensitivity. Success depends on an accurate control of sepsis not always present even with the topical therapy now available. Perhaps most important, it is a late measure designed to hold the line at a time of metabolic crisis. Nothing is done to alter the initial phase of the burn illness or to increase the rate of healing to shorten the overall period of this illness.

With an eye to decreasing this period of healing, it is now reasonable to reexplore the possibilities of immediate skin closure. The control of burn wound infection which has come with the development of efficient topic antibacterial therapy has produced important changes in both the clinical state of the patient and the natural history of the burn wound. In the latter area, it is now clear that the spector of late, unavoidable, destructive infection need no longer inhibit early efforts at repair of the burn wound. The following is a description of a method which attempts to approach immediate burn wound closure via a combination of the infection controlling aspects of topical 0.5 percent $AgNO_3$ and the wound closure potential of immediately applied skin allografts to areas of second and third degree burn.

Materials and Methods

All patients admitted to this study were assessed immediately upon admission to the hospital. Following initial management of the burn wound, topical 0.5 percent $AgNO_3$ therapy was carried out with only slight modification in the regime as published by Moyer et al. Systemic management was carried out in the usual fashion using plasma containing solutions.

Local Treatment of Burned Areas.—The burned areas were cleaned by washing all oil or grease from the surface. Loose skin, blebs, and foreign material were debrided. Viable split-thickness cadaver skin allografts, or donor skin allografts from parents or siblings, were immediately applied over all test-burn areas irrespective of the clinical judgment of the depth of burn. The allografts were then covered with $AgNO_3$ dressings. Control areas were treated with topical 0.5 percent $AgNO_3$ therapy alone. The control areas were selected to match allografted areas anatomically as well as in depth of burn (ie, hand for hand, forearm for forearm, etc). Allografts were applied without anesthesia at the bedside. These were secured in place by the application of several layers of wide mesh gauze dressings soaked with 0.5 percent $AgNO_3$. The topical $AgNO_3$ therapy was carried on in both the grafted and nongrafted areas in exactly the same way as described above. The patient and the dressings were then covered with a dry blanket, considerably diminishing surface evaporation and, therefore, evaporative heat loss from the wound surface. It was felt important that the dressings were kept continuously wet with $AgNO_3$ by pouring an excess of the solution on to the dressings every two hours. Dressings were changed daily without anesthesia. Any skin allografts removed by the daily dressing change were replaced with fresh grafts. During these dressing changes, any gentle debridement necessary was carried out, again without anesthesia. Skin grafts were allowed to remain in place until they peeled spontaneously off areas of healed, deep second-degree burns or began to be rejected from areas of third-degree burns.

Split-Thickness Skin Allografts.—Split-thickness human skin was obtained from cadavers within eight hours of death. Patients who had died with a history of malignant disease, current infectious disease, or a history of jaundice were not used. An aseptic technique was used to obtain the grafts, including preparation and draping of donor sites, as well as the use of sterile gowns, instruments, and gloves. A Brown dermatome was used for the removal of skin (11/1000-inch thickness) after which the skin allografts were wrapped in sterile sponges soaked in normal saline solution, placed in sterile Petri dishes and refrigerated at 4 C until used. Skin for grafting was not kept longer than two weeks before use.

Results

Sixty-five patients with second- and third-degree burns involving between 30 percent to 85 percent of the body surface were treated by the use of topical 0.5 percent $AgNO_3$ in combination with skin allografts. In patients studied, healing of partial-

thickness burns (superficial and deep) occurred beneath the allografts within a period of 10 to 18 days. This is accomplished by reepithelialization of the burn surface from remaining epithelial elements. Following reepithelialization, the allograft dried and separated as a thin scale. There was no clinical evidence of rejection of allografts covering areas of partial-thickness skin loss which healed spontaneously. Areas of full-thickness injury declared themselves by the end of the first week. In these areas, the immediately applied split-thickness skin allografts did not take. These areas were debrided, and as the slough separated they were allografted. As soon as the skin allografts began to take, these areas were autografted.

In the control areas treated with 0.5 percent $AgNO_3$ healing of partial-thickness burns proceeded at a much slower rate. It was not possible to quantitate the difference between areas in each group requiring an autograft for final closure. There was, however, strong indication that small areas of full-thickness skin loss healed considerably faster by edge migration when treated with a combination of allografts and $AgNO_3$.

Early in the study, allografts alone were used without $AgNO_3$. In these patients, considerable sepsis developed in the cracks and spaces between grafts, and spread to destroy the adjacent allografts. This technique was therefore replaced by the use of $AgNO_3$ directly over the allografted areas in exactly the same manner as is used in ungrafted areas.

The following case reports will illustrate the clinical course of patients treated with combined therapy.

Report of Cases

Case 1.—A 56-year-old white man sustained 75 percent body burns following an industrial accident. Burned areas included the face, scalp, ears, neck, anterior and posterior trunk, both upper extremities including hands and fingers, and anterior right thigh and leg, as well as the left mid-leg and knee. No respiratory tract burn was noted. It was initially estimated that the patient had sustained a 40 percent full-thickness burn with the remaining burn a deep second degree. Upon admission, after initial management of fluid requirements was begun, the burn wound was carefully cleansed and blebs removed. Skin allografts were immediately applied over the burn areas on the anterior chest wall, both ears, right shoulder and arm, elbows and dorsum of both hands and fingers. About 60 percent of total burn surface was covered with allografts during the first day. Allografts were secured in place with gauze dressings soaked in 0.5 percent $AgNO_3$. About 85 percent of the initial allografts took. During daily dressing changes, additional open areas were covered as allografts became available. Burn areas over the right lower extremity were not allografted, and were treated with conventional topical $AgNO_3$ dressings. On the ninth postallografting day, most of the grafts that "took" were starting to "flake" off, and the areas under the allografts were covered with regenerated epithelium. Burn areas over the right shoulder and right upper extremity which were originally estimated as full-thickness injury were obviously healing by reepithelialization under the graft by the 16th day. By the 30th hospital day, all burned areas, both deep second degree and the small irregular areas of third-degree burn, on the face, trunk, and both upper extremities were all healed spontaneously requiring no autografting. The burned areas of the right leg not allografted early required two grafting procedures. Despite the extent of burns, his nutritional status remained excellent throughout the period of hospitalization. He was discharged on the 60th hospital day in excellent condition with all burned areas healed.

Case 2.—A 9-year-old boy was admitted to the Massachusetts General Hospital because of flame burns. He sustained second- and third-degree burns covering 45 percent of his body surface, affecting neck, anterior and posterior chest, both upper extremities (including both hands and fingers) and posterior aspects of both lower extremities. Fresh skin allografts were applied over most burned areas of the chest and the right upper extremity, including the hand, while the left upper extremity was treated with $AgNO_3$ alone. The grafted and ungrafted burned areas were wrapped with several layers of gauze soaked with 0.5 percent $AgNO_3$. Approximately 65 percent take was achieved, and open areas were regrafted. These were allowed to stay in place until they peeled off by the tenth day, leaving a clean regenerating epithelial surface. Burns covering both upper extremities (excluding both hands) proved to be full thickness and required autografting. All areas of partial-thickness injury covered with allografts, particularly those over the neck, anterior chest, right hand and fingers, were completely resurfaced before 21 days. The areas of partial-thickness burn of the left upper extremity, hand and fingers were not completely healed at 30 days.

Dressings of $AgNO_3$ were continued over all

burned areas and on the 32nd hospital day, autografting was carried out on both upper extremities, leaving burned areas over the back and lower extremities until donor sites were available. These areas were autografted as the patients' clinical condition and donor sites allowed. His further hospital course was complicated by a systemic salmonella infection which originated in the gut, and considerably delayed his discharge from the hospital. The salmonellal infection was cleared by a protracted course of intravenously administered chloramphenicol (Chloromycetin).

Comment

The extensively burned patient is faced with a number of hazards which spring directly or indirectly from the physiologic deficiencies found in the burn wound. These hazards fall into two broad groups: The first is concerned with dangers of bacterial invasion and infection. The second is concerned with the metabolic cost of maintaining homeostasis and internal sterility in the face of a large, permeable, contaminated area of body surface. Clinical burn therapy, therefore, continues to be involved at this time with the problems of bacterial infection, for they remain life-threatening. However, the success of topical antibacterial therapy has, in part, removed the hazard of bacterial invasion, and allowed an unobstructed view of the full impact of the metabolic load. It is clear from this experience that further improvement in burn therapy must include measures which prevent these metabolic dislocations as well as prevent bacterial invasion of the wound.

The method of combined therapy described above is the result of a progressive evolution of treatment regimes over the past four years. In our experience, the striking improvement seen in the behavior of the patients and their burn wounds following late allografting of areas of granulating full-thickness loss led to a regime where allografts were placed following initial care in the first postburn week. A majority of these grafts "took," resulting in rapid healing of partial-thickness burns. These observations led to the present treatment regime based on the immediate application of skin allografts combined with topical $AgNO_3$ therapy being reported. The use of this combined therapy has proven successful in preventing the late development of metabolic and nutritional problems; it has increased the accuracy of control of surface infection over 0.5 percent $AgNO_3$ alone, and thereby allowed rapid wound healing of partial-thickness burns and small areas of full-thickness loss. Patients have been comfortable and free of pain, so that they are restored to full mobility at an early date. Not only has fluid and protein loss been decreased, but the electrolyte loss via the $AgNO_3$ treated burn surface has been shown by metabolic balance studies to be reduced following the application of allografts in direct relation to the square area of surface covered by a viable allograft.

Much has been published about the multiple uses of skin allografts as an adjunct to the usual therapeutic approach to the severely burned patient. Allograft skin functions as satisfactory though temporary biologic wound closure over granulating full-thickness injury, and has often been life-saving in patients with extensive burns. It is clear, however, that this late approach could be utilized only during the postburn period when the burned areas are clean and devoid of eschar well into the period of excessive metabolic loss. Few studies have been published regarding the beneficial effects and uses of skin allografts in partial-thickness injury during the postburn period.

In this study, we have attempted to employ a new approach to the care and management of the severely burned patient in the immediate postburn period. This is an attempt to take advantage of the antibacterial effects of topical 0.5 percent $AgNO_3$ and the beneficial effects of viable human skin allografts as a combined therapy. Clinical experience has shown that although clinically effective surface bacteriostasis has been achieved, the general metabolic well-being of the burn patient does not stabilize until complete skin cover is accomplished. In our hands, the adjunctive use of viable skin allografts in the immediate postburn period has proven a valuable procedure as a biologic wound closure and has consequently favorably influenced the prognosis of the severely burned patients. These beneficial effects were accomplished in a number of ways. Besides the effective control of sepsis, particularly when the skin graft has "taken," the patient's general metabolic and nutritional state remains excellent and they are painfree and comfortable. An oral dietary intake of high caloric content, even in small children, can be dependably given alone to satisfy daily caloric requirements. In addition, the allograft applied over open burn areas functions as a satisfactory "primary" wound closure decreasing loss of body fluids, proteins, and of electrolytes via the wound surface.

A significant metabolic drain occurring in burns results from the excessive evaporative water losses via the burn surface. A major portion of the so-called burn hypermetabolism is related to body heat loss as a result of vaporization of water. Effective control of this large energy loss has been accomplished by the application of the wet dressings inherent in the $AgNO_3$ treatment system plus the use of viable skin allografts. Energy thus conserved relieves the patient of large and unproductive expenditure of calories during a time when he is being pressed by the extensive metabolic needs during the period of recovery.

The observation that epithelial resurfacing occurs rapidly when allografts are applied over areas of second-degree burns (superficial and deep) suggests that a viable cutaneous graft provides an environment which allows the maximum rate of growth of epithelial elements by removing growth inhibitors such as bacterial products. However, the exact mechanism of this phenomenon is not clearly understood. Attempts to document the biologic effects of cutaneous allografts in second-degree burns were undertaken by Miller, Switzer, Moncrief, and others. In these studies, several biopsies were taken from comparable wounds in burn patients, and the difference between the allografted and nongrafted burn areas was remarkable. The most noticeable characteristics were the absence of inflammatory reaction and the polarity of regenerating epithelium which is improved in homografted second-degree burns. In addition, it has been shown that a graft (autograft or allograft) has a direct organizational effect on the wound-healing mechanism and it has also been observed that a split-thickness graft will prevent contracture in an open wound.

The combination of $AgNO_3$ therapy and immediate split-thickness skin allografting provides the potential for definative closure of all areas of partial-thickness skin loss. Areas of full-thickness skin loss must, however, still go through the protracted period of separation of slough and autografting. A more rapid wound closure could be achieved for full-thickness injury if primary excision and immediate autografting of areas of third-degree burns was added to the above regime.

Summary

A combined burn therapy has been described which utilizes the antibacterial effects of topical 0.5 percent $AgNO_3$ and the use of immediately applied skin allografts to areas of second- and third-degree burns. This therapeutic approach and the clinical experience with its use in burn patients is described. This method has favorably influenced the prognosis of the severely burned patient, and has proven life-saving particularly in children with major thermal injuries. The beneficial effects were considered due to an effective control of burn-wound sepsis by 0.5 percent $AgNO_3$; the definative immediate closure of areas of partial-thickness skin loss by allografting; the reduction of protein, fluid, and eletrolyte losses via the burn surface by allografting; the reduction of the evaporative heat-energy loss by continuous wet dressings; and overall improvement in patient well-being, allowing a high caloric intake and rapid full mobilization.

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(The figures and references may be seen in the original article.)

EARLY DIAGNOSIS OF SCHIZOPHRENIA

J. L. T. Birley, MRCP DPM, Brit Med J 4(5625):232–234, Oct 26, 1968.*

The term "schizophrenia" includes a range of conditions which vary both in symptomatology and outcome. It generally implies that at some time in the course of the illness some of the following symptoms have been present: disturbances in perception (particularly auditory and somatic hallucinations), in thinking (a confusion or interruption of the usual trains of thought and the formation of delusions), and motor performance (excitement, retardation, and the expression of abnormal experiences by gesture). Just how many ingredients are required, how

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specific they have to be, and what course the disease must take in order to qualify for the diagnosis of schizophrenia will not be discussed in any detail. Instead, this article will concentrate on three themes; those groups of people who are particularly at risk, the early signs of the illness, and the pros and cons of early diagnosis.

Groups at Risk

The most important fact to remember is that *in its early stages schizophrenia is a rare disease.* A general practitioner will see, on average, about one new case every three years. On the other hand, because the condition afflicts people early in life and often runs a chronic or recurrent course, patients accumulate, and a general practitioner can expect to have several affected patients, with a variable degree of handicap, on his list. The incidence rate is the same for both sexes, but for men the peak risk period is early adulthood, and the disease is commoner among bachelors, whereas for women the risk is more evenly spread through life and between the single and the married. In Britain, as in most countries, schizophrenia is commoner among immigrants from abroad—West Indians, for example.

The typical "identikit" picture of the pre-schizophrenic is of an outsider who has made few if any lasting friendships with either sex, and whose lack of social skills has reduced him (or her) to solitary activities for which he has no particular aptitudes or even liking and to defensive attitudes of fear or scorn of society in general. Other vulnerable groups seem to be bachelors living with dominating mothers, women after childbirth, and women in late-middle-age who have been divorced, or widowed (often after an unhappy marriage), or are spinsters living in guilt-edged insecurity lest various sexual skeletons should emerge from their cupboards.

Nevertheless, even in these groups early schizophrenia remains a rare disease, and the psychiatric disturbances of such people are much more likely to be due to depression or anxiety states and the difficult adjustments of their personalities to altering circumstances.

Early Symptoms

What then are the early symptoms and how can they be recognized? It is important to distinguish between premonitory but non-specific symptoms and the first appearance of more specific ones. Non-specific symptoms can include practically any psychiatric disturbance, but particularly common are irritability, restlessness, depression, hypochondriasis and withdrawal, often accompanied by a reduction in the person's usual skills or performance, as the following cases illustrate.

Mr. A, a married press-operator aged 28, became depressed over a matter of a few weeks and went to his doctor complaining that he felt miserable and had lost his sexual desire. He was given a tranquillizer. Two weeks later he told his wife that his workmates were talking about him. Within a few days he became overactive, suspicious, and misinterpreted everyday events as evidence of a conspiracy against him. He was then admitted to hospital, where he made a rapid recovery.

Miss B, a girl of low intelligence (I.Q. 75), complained of depression and concern that her "glands" were not working. She was finally admitted to a psychiatric hospital, where she failed to improve. Her hypochondriacal preoccupations were rather bizarre and clearly related to feelings of sexual inadequacy. Within a year she had developed clear-cut schizophrenic symptoms, and she remains psychotic and severely handicapped, though out of hospital, eight years later.

Mr. C, a lanky, shambling boy of 19, stopped work and began to spend most of his time in bed. His family took no action about this for a year, by which time Mr. C. was spending nearly all his time in his bedroom, emerging only for meals. He then became acutely excited, shouting out about the second coming, in which he thought he was to be personally involved. Soon after admission to hospital he returned to his usual extremely withdrawn but not unfriendly self. He is now working, but his life is totally without any external incident. His only interactions with a person other than those at home or at work are his visits to outpatients, which he never misses, although he rarely volunteers any remark.

In these three cases there was a period of abnormal behaviour prior to the emergence of more florid psychotic symptoms. In the first case the patient reported his delusional suspicions to his wife, and it is possible that he was entertaining these when he first saw his doctor.

Other people close to the patient are often important sources of information. The general practitioner is well placed to draw on these sources, and he will have to decide when to do so. The abnormal experiences of many patients may be confined to certain situations—in many cases the home. Mrs. D, for instance, came to her general practitioner complaining of feeling depressed and anxious in her

flat. Every evening she felt apprehensive as she left her place of work, where she held an important clerical post. Her husband then told her doctor that she was convinced that people in the flats were annoying her deliberately and were spying on her with machinery. She was experiencing somatic and auditory hallucinations at home, but as soon as she left her flat these ceased completely.

In some cases it is the employer who has most information. The relatives who lived with Miss E, always an unsociable and irritable person, had noticed that over the past year or two she had become more withdrawn and was neglecting herself. They suggested that she went to her general practitioner, who gave her a tranquillizer. They were surprised when she was admitted to hospital from her place of work. There, "Molly" was a well-known character whose industry at washing up more than compensated for the fact that she frequently shouted at imaginary voices and accused her workmates of making remarks behind her back. Her sudden admission was precipitated by her threatening violence for the first time.

The difficulty is to detect when these non-specific symptoms are accompanied by more specific ones. Intense and defensive withdrawal, self-preoccupation, and a lack of emotional involvement with others are all suspicious signs, but they are certainly not enough to make the diagnosis. In early schizophrenia such behaviour is often due to an impairment in concentration and in perception which leaves the patient puzzled and bewildered. Some general questions that make it clear that the doctor is aware of these difficulties and understands them will help the patient to talk about his experiences, which he may interpret in delusional terms. For instance he may think that the interference in his concentration is due to his thoughts being "taken away" or to others deliberately altering his thoughts or putting strange thoughts in his mind, while his perceptual disturbance may lead him to think that "something strange is going on," that people are not what they seem or that they may be other people in disguise. At this stage it is very common for the patient to have the characteristic double insight of early schizophrenia. The explanations of his experiences vary both in type and in degree of certainty, and he wavers in his choice.

Positive Evidence

A definite diagnosis must be based on positive evidence of abnormal perception and thinking, as judged by the patient's own account and behaviour and the reports of others, and never on just the "quality of rapport" or "blunting of affect," which are extremely unreliable. They give rise not only to false positives but also to false negatives, since it is a mistake to think that blunting of affect is a sine-qua-non of schizophrenia.

Mr. F is one of a large family of street vendors. He came to the hospital complaining of many classical schizophrenic symptoms. A solitary man with few friends outside his family, he made excellent rapport with the staff and patients. Partly because of his warmth and geniality, the diagnosis of schizophrenia was questioned at first, but it has been confirmed by the subsequent course of his illness.

When there is a hint either from the patient or from others that the patient is preoccupied with abnormal thoughts or experience the general practitioner should attempt to elucidate these further if he has the time and skill. The examination required to do so need involve no more pain or affront to the dignity than does the palpation of a tender abdomen. How much or how little information will be obtained in either procedure will depend on the tact and skill of the examiner. But the general practitioner is in a difficult position. Firstly, because of the comparative rarity of psychotic states, the interviewing which is relevant to them may have been allowed to atrophy from disuse or lack of positive reward even if it was part of his original repertory. Secondly, it is sometimes the case that patients talk more freely to an unfamiliar doctor than to a familiar one. Thirdly, particularly in younger patients, a sense of alienation from the family is common, and the family doctor may be too closely identified with the parents to be regarded as a possible confidant.

In such cases the general practitioner's time may be best spent in persuading the patient to see a psychiatrist for a diagnostic opinion. In those cases in which his suspicions are highly aroused or he is fairly confident of the diagnosis a psychiatric opinion should be obtained by a domiciliary visit if necessary. If he does find himself having to treat an acute psychotic episode on his own—and there are probably a number of such states which settle quite rapidly on phenothiazines—he should not regard the patient as "schizophrenic," and it is advisable that the patient be seen by a psychiatrist when he has recovered.

Pros and Cons of Early Diagnosis

The advantages and disadvantages of early diagnosis can best be discussed with reference to Wing's

useful distinction between primary and secondary handicap in schizophrenia.

The primary handicaps are the symptoms of the disease process itself and include altered and abnormal perceptions, disturbances in thinking, retardation, and excitement. In theory early diagnosis should lead to better results and less primary handicap. It is certainly true that those patients who bring themselves or are brought for treatment with only a short previous history have a better outlook than those with a long one. But this has always been so, and is at least partly due to the fact that the early cases have become excited and obviously disturbed, and this type of symptomatology generally carries a good prognosis. The good results of early treatment may therefore be partly a function of the natural history of the disease. Nevertheless, the treatments now available for schizophrenia are certainly more effective than they have been in the past, and every patient should have the opportunity of being assessed for treatment as soon as possible. This may prevent not only primary but also secondary handicaps.

The latter are the social and psychological consequences of the illness itself or of its treatment. In the past one of the major secondary handicaps was the effect of a prolonged stay in the monotonous but undemanding environment of a mental hospital. Nowadays this is a comparatively rare event, and the main handicaps arise from the attitudes which the patient takes towards himself as the result of being a "psychiatric case," and which other people such as his family, his employer, or his doctor take towards him. Thus the general practitioner's role in preventing secondary handicap has become increasingly important.

After a terrifying but not particularly severe coronary thrombosis a patient's subsequent recovery may be drastically influenced by whether the general practitioner talks about "taking it very easy" or about a "gradual return to full activity." In the same way the family may adopt all sorts of disabling attitudes in the ferment of emotion which generally precedes and accompanies the procedure of first admission to hospital. They include anxiety, guilt, hostility, rejection, and denial. The general practitioner is often best placed to deal with these, as he knows their origins, and in moments of crisis people are susceptible to guidance. A refusal to recognize their anxiety, or vague reassurance, will only make the patient and family suspect the worst, but they can often be helped by a realistic appraisal of the problems involved. The following are some of the more important.

Implications of the Diagnosis of Schizophrenia

A diagnosis of schizophrenia is regarded as ominous by most laymen, who associate it with a "split mind." Many doctors feel that "a schizophrenic" implies a career of violence and unpredictability with a shambling conclusion down a mental hospital corridor. It is certainly true that the diagnosis is a serious one, but the outlook is less gloomy than it was. About half of all first admissions make good recoveries and only about 25 percent remain seriously handicapped. Nevertheless, this is a substantial minority, and too optimistic pronouncements disregard a considerable burden on patients and their families. In the individual patient the prognosis is for a person rather than for a disease. The longer the history, and the greater the social maladjustment before the illness, the greater will be the problem after treatment, and the more seriously should be considered other readjustments such as living away from home, sheltered employment, or day care.

Because of its important implications the general practitioner should not "settle" for a diagnosis of schizophrenia, at least with the patient or his family, without getting a psychiatric opinion. States of psychotic excitement occur in drug intoxications, cerebral disease, and mania, while many depressed patients complain that their thinking is severely impaired, express delusions of persecution, and hear derogatory or threatening voices.

Occupational Adjustment

It is quite common for a person's performance at work to have deteriorated prior to first admission, and it may be necessary for the patient to resume work at a level considerably lower than the aspirations of himself or his family, whose attitudes may be quite unrealistic. Quite often a patient has not worked for a period of months or even years prior to coming to treatment. If he is considered able to work he should be encouraged to do so. The general practitioner may need to help with these difficult adjustments. The reason that patients should work has nothing to do with the bourgeois ethos: it is because work may be a place where a patient feels appreciated and where he gets into a circle other than his family.

Social Adjustment

A considerable number of patients are rather shy, isolated people. The general practitioner will do

better to respect this than to join the chorus of friends and relatives who adjure him to "go out more" or "to get a girl friend."

In general such persons find it much easier to interact in some instrumental capacity such as in fishing, boat-building, or cycling clubs than in the alarming gatherings which demand purely social skills. For example, a patient who would find going to a dance an intolerable threat may enjoy the comparative rituals of ballroom dancing.

Personal Relationships

Many patients prefer and seek out a distant or neutral relationship and avoid a close one, and some relatives find this distressing. Spouses may find it intolerable, and indeed it is in heterosexual and especially marital adjustment that most patients and their families have their greatest difficulties. In a recent series reported by this unit 33 percent of the first admitted men and 9 percent of the first admitted women had separated during the five year follow-up period. The general practitioner is often in the best position to assess this situation and to anticipate at an early stage what difficulties are likely to arise and what can be done to help.

Taking Drugs

Many patients and their relatives dislike the idea of being on a drug, as it implies that they are sick. This is a perfectly understandable attitude. Nearly half of all psychiatric outpatients do not take their drugs as prescribed. It is likely that in the early stages even fewer patients take them regularly. The general practitioner will have to explain to the patient and his family that he should continue drugs for as long as they are prescribed and that the patient will not "get used to them" nor "become a drug addict." He should also be familiar with a few phenothiazines and their side-effects.

Advantages of Early Diagnosis

Early diagnosis, therefore, has two advantages. It gives the general practitioner an opportunity to help the patient and his family to make a positive adjustment to psychiatric illness, and it also allows for early intervention. This in itself is extremely valuable. Excitement, for instance, carries a good prognosis, but if this has led to aggressive or other frightening behavior then the patient may well return, if at all, to the secondary handicaps of a hostile or anxious family.

Dangers of Early Diagnosis

There are two main dangers of early diagnosis. The first is that it may be wrong—but once made the traditional labels get stuck on to the patient. A shy person's nervous smile becomes a "fatuous" or "incongruous" or "manneristic" giggle; his frightened withdrawal "blunting of affect"; his confused explanations "incoherence"; and his fantasies "bizarre delusions."

The second danger is that even when the diagnosis is correct the same process occurs. The patient joins the alienated ranks of "schizophrenics." An explanation is substituted for a thorough understanding of the patient's symptoms, problems, and needs, and consequently both he and his family suffer. An early diagnosis, therefore, should often be a provisional one, and it should never be allowed to obscure the patient as a person.

Co-operation with Others Involved

It is likely that a number of people, psychiatrists and social workers, will become involved with the patient and the family. The degree of communication between them and the general practitioner varies considerably, and so does the general practitioner's enthusiasm for tackling psychiatric problems. A general practitioner's role may thus vary between taking the major responsibility and doing nothing. In either event it is most likely that the patient or his family will turn to him for advice. If this conflicts with that given by other members of the team, or if they undermine the general practitioner, then the patient will suffer. The general practitioner and the rest of the psychiatric team must co-operate in a plan of treatment and keep each other informed of developments. They should start to do so as soon as the patient has been referred. Their links should not need to be forged in the heat of avoidable crises.

I am grateful to Dr. E. Roderic-Evans, of Cane Hill Hospital, and to the consultants of the Bethlem Royal and Maudsley Hospitals for permission to use their case reports.

(The references may be seen in the original article.)

MEDICAL ABSTRACTS

ABDOMINAL ANGIOGRAPHY

J. J. Pollard, MD, and R. A. Nebesar, MD, New Eng J Med 279(19): 1035-1042, Nov 7, 1968 and 279(21): 1148-1152, Nov 21, 1968.

Within the last 15 years the clinical use of abdominal angiography has increased at a rapid rate. Safer contrast mediums, sophisticated fluoroscopic and radiographic equipment, simplified catheter introduction and well trained, experienced angioradiologists have made the procedure safe and simple enough for routine clinical application.

It is the purpose of this progress report to describe the current status of abdominal angiography as a clinical tool with particular reference to selective angiography of the branches of the abdominal aorta.

MALIGNANT MELANOMA: AN APPRAISAL

John S. Stehlin, Jr., MD, Surgery 64(6): 1149-1157, Dec 1968.

Unfortunately, in terms of improving over-all results with melanoma, too much emphasis has been placed on the efficancy of prophylactic node dissection and not enough on early diagnosis of the primary tumor. Despite all the trumpeting about early diagnosis, the sad fact remains that, with current diagnostic techniques, many major cancers cannot be diagnosed early. Melanoma is different.

History of change is vital and has not received enough attention.

Local recurrence of melanoma must not be considered analogous to local recurrence of other skin cancers. It carries an ominous prognosis.

The value of prophylactic lymph node dissection is undetermined, although it could be in a relatively short period of time with carefully controlled clinical and histopathologic studies.

Because of better understanding of clinical and biologic aspects of the disease, a more intelligent endeavor can be directed towards treatment and prognosis.

SOAP PHOTOALLERGY

W. Mitchell Sams, Jr., MD, Mayo Clin Proc 43(11): 783-794, Nov 1968.

Soap photoallergy due to the antibacterial salicylanilides and related compounds is becoming an increasingly frequent medical problem. Patients with this condition present most commonly with an eczematous eruption confined to areas exposed to the sun. Diagnosis is confirmed by photopatch testing using long-wave ultraviolet light. In the majority of patients the eruption subsides when the use of soaps is discontinued. However, a significant number of individuals become persistent reactors to light and remain exquisitely sensitive to sunlight for months or years.

GLAUCOMA

R. Levene, MD, Arch Ophthal 81(3): 421-440, Mar 1969.

This review consists of material selected from clinical and basic research publications from June 1967 to June 1968. Foreign articles not available to the reviewer at this time will be included in next year's review. Apart from the journal references, an additional list on texts and reviews on glaucoma during 1967 has been listed following the reference section. Noteworthy trends are continued studies of high quality on visual fields and the side effects of medical treatment. The latter includes steroid glaucoma, possible cataractogenic effect of anticholinesterase drugs, and epinephrine maculopathy in aphakia. A large number of studies deal with pseudofacility.

The reader should keep in mind that in many instances conclusions from clinical research studies cannot be made with the same degree of certainty as some basic studies. In clinical research there is usually a large number of variables that are difficult to control, and practical considerations make it difficult to obtain sufficient unbiased data for a rigorous analysis of all variables. Too often the conclusions from a small sample with a large number of pertinent variables are little better than a clinical impression. The use of the usual statistical tests for testing significance between means can be helpful and may be necessary, but they also lend an air of certainty to the results that is often incorrect in view of the un-

derlying basic difficulties. One feels more certain when visual inspection of the data strongly suggests a significant trend. The author believes that small differences that require a statistical test to show a significant result should be viewed with caution, in particular with a small sample. The usual test for significance is the Student *t*-test. While this is a time-honored test there is a trend towards the so-called nonparametric tests. Although the latter have slightly less power, they do not rely on the assumptions necessary for the former and they are rapid and simple. The author recommends their use, in particular for small samples.

DIAGNOSIS OF SURGICAL DEEP MYCOSES

J. Schwarz, MD, and K. Salfelder, MD, Surg Gynec Obstet 128(2): 259-274, Feb 1969.

Precise diagnosis of deep mycoses is possible through proper handling of biopsy for both histologic examination and culturing and mandatory in view of the availability of specific antibiotic therapy or the need for combined antibiotic-surgical treatment.

A high index of clinical suspicion can facilitate the diagnosis of actinomycosis from the presence of fistulas and of a suppurative granulation tissue. A geographic history can be most helpful in recognizing histoplasmosis and coccidioidomycosis, since both diseases have high endemism in well defined areas. In these disorders, specially stained sections may give the diagnosis within 24 to 48 hours as compared to two to six weeks by culture methods.

Clinically, blastomycosis and paracoccidioidomycosis are prominently visible in the skin and mucous membranes, while the lung is the site of primary infection as in histoplasmosis, coccidioidomycosis, and cryptococcosis. The latter is the most opportunistic of the fungi commonly seen in association with disorders of the lymphohematopoietic system and with steroid or cytotoxic therapy. Chromomycosis, a comparatively rare granulomatous lesion, mostly of the lower extremities, can be quickly recognized from the brown spores in tissue sections or scrapings.

The majority of deep mycoses can be arrested, or even cured, with amphotericin B. Actinomycosis is susceptible to treatment with penicillin and several other antibiotics. In chromomycosis, little more than debridement can be offered.

Various degrees of pulmonary resection give excellent results in cavitary and nodular forms of all deep mycoses. Culture methods and fluorescent antibody stains represent the ultimate in specific diagnosis, but workable information is generally more promptly obtained by proper processing of the biopsy.

CARDIOPULMONARY RESUSCITATION: THE ANESTHESIOLOGIST'S ROLE

Frederick S. McAlpine, MD, Med Clin N Amer 53(2): 385-396, Mar 1969.

The anesthesiologist's role in cardiopulmonary resuscitation touches on many spheres of total patient care. His expertise of care in the realm of ventilatory support in the emergency situation can be a deciding factor to the successful outcome of the emergency. The causes of ventilatory and circulatory arrest have been elucidated and the various factors involved in the aftercare have been outlined.

The care of such patients involves the teamwork of many disciplines and not just the effort of one specialty. The problems are numerous, complex, and often involve both medical and surgical specialists. A clear, logical approach to such emergency situations is essential.

OVERWEIGHT AND HYPERTENSION

B. N. Chiang, MD, L. V. Perlman, MD, and F. H. Epstein, MD, Circulation 39(3): 403-421, Mar 1969.

The interrelationships between hypertension and obesity, two common and major health hazards, are reviewed. Comparisons of simultaneous intra-arterial and cuff blood pressure measurements indicate in general that the association between blood pressure and body weight is real and independent of arm circumference. Hypertension is more common among the obese than among the nonobese and, conversely, a significant proportion of hypertensive persons in the population are overweight. Obese hypertensive subjects experience a greater risk of coronary heart disease than the nonobese, and mortality rates for obese hypertensive persons are higher than for those with obesity alone or hypertension alone. Weight reduction has been shown to lower blood pressure, and it may bring about a more favorable prognosis in obese hypertensive persons. Possible mechanisms that may be responsible for the frequent association between obesity and hypertension have

been discussed. Irrespective of the underlying pathophysiologic mechanisms, the adverse metabolic and hemodynamic effects of obesity upon hypertension impose an extra burden and strain on the circulatory system and compromise its functional adequacy. Although it is not precisely known to what extent weight reduction alone may be effective in controlling or preventing the lesser degrees of hypertension, the control of obesity should be an intrinsic part of any therapeutic or preventive antihypertensive regimen.

PUBLIC HEALTH ASPECTS OF RELAPSING TUBERCULOSIS

Ole Horwitz, Amer Rev Resp Dis 99(2): 183-193, Feb 1969.

It was possible to assess the problem of relapse of pulmonary tuberculosis in Denmark from a public health point of view since, in 1950, it became obligatory to report to a national register all arrest of disease among patients with active pulmonary tuberculosis. A uniform criterion for arrest was used.

Relapse rates were studied among 6,242 persons whose disease was arrested during 1951-1953. A total of 522 relapses were reported during a seven-year follow-up period. Rate of relapse was 13 per 1,000 person-years, 50 times higher than the incidence of new cases in the general population. The rate was higher in males than in females and increased considerably with age. Frequency of relapse was higher among infectious than among noninfectious patients. Rate of relapse decreased during the first part of the observation period but then levelled off. The relapse rate in the study population was twice as high as among patients from the isoniazid era. The excess mortality, which is based on deaths from all causes, was obtained by comparing the death rate in the study population with that in a group of normal persons of the same sex and age. The risk of death in patients with arrested disease was 34 percent greater than normal. When viewed diagrammatically, the dynamic interplay between the general population, the pool of active cases, the pool of previous cases and the pool of deceased cases pinpoints the significance of previous patients for a program designed to eradicate the disease.

HOSPITAL ADMINISTRATION SECTION

RATION DATA

Ration statistics for total hospital food service program in 3rd quarter FY 1969 are as follows: (Source-Food Service Performance Analysis, NAVMED 1412)

Total Rations Served	1,461,394
Total cost of provisions	$1,929,336.67
Average cost of ration (raw food or net cost)	$1.320
Average cost of whole, fresh milk/gallon	$0.80
Average ounces served whole, fresh milk/ration	25
Percentage of Total Expenditures for:	
Meat, fish and poultry	37
Whole, fresh milk	12
All other categories	51
Average ration cost for hospitals, by group:	
Group A (CONUS) 81,827 to 219,643 rations/qtr	$1.307
Group B (CONUS) 30,891 to 62,419 rations/qtr	$1.291
Group C (CONUS) 8,785 to 33,479 rations/qtr	$1.364
Group D (OCONUS) 8,638 to 75,215 rations/qtr	$1.377
Average % of attached inpatients served	77
Average % of attached staff/support personnel served	59
Average % of modified diets to total inpatients served	16
Average % of total expenditures for supplemental nourishments	2.5

RESERVE SECTION

HOW MUCH DO YOU KNOW ABOUT USNR PARTICIPATION?

The following information is reprinted from handouts prepared by the Naval Officer Records Support Activity, Omaha, Nebraska, and is presented here for the information of our Naval Reserve Medical Department Personnel.

Did you know—

. . . That you have accrued many valuable retirement points and satisfactory service during your recent tour of active service that are translatable into cash?

. . . That by being credited with only 50 retirement points in each ensuing year you will earn additional years of satisfactory service toward qualifying for retired pay?

. . . That 15 of the required 50 points per year are credited to your account gratuitously leaving only 35 points to be earned through USNR participation?

The following discussion provides additional information concerning the above questions dealing specifically with (1) the earning of retirement points, (2) anniversary dates, (3) eligible status, and (4) retired pay.

Earning Retirement Points

An officer who is in an eligible status, may earn retirement points in any one or a combination of any of the following methods:

. . . One point is credited for each day of active duty or active duty for training including travel time as indicated in the disbursing officer's endorsement.

. . . One point is credited for each authorized drill attended in either pay or nonpay status.

. . . One point is credited for each period of equivalent instruction or appropriate duty performed as authorized by your commandant or the Chief of Naval Personnel.

. . . Points are credited upon satisfactory completion of authorized correspondence courses. The point credit varies with the course completed. For courses evaluated at more than 12 retirement points, credit will be granted on satisfactory completion of (1) each 12-point unit of the course and (2) the final unit, which may be less than 12 points. Credit applies as of the date the last satisfactory assignment of each unit is mailed.

. . . Fifteen (15) gratuitous retirement points are awarded during each anniversary year if the member is not on the Inactive Status List, retired or was not on active duty or ACDUTRA for the full anniversary year.

. . . A maximum of 60 retirement points each year may be credited by means of all but the *first* of the foregoing items (active duty and ACDUTRA). Points for active duty and ACDUTRA may be added to this 60-point limitation.

Anniversary Date and Anniversary Year Defined

Anniversary 'date' is the date on which a year commences for point credit purposes. The anniversary date for any person who was a member of a Reserve component on 1 July 1949, and who thereafter continues as a member of a Reserve component without a break in such service, is 1 July. For any person who enters a Reserve status after 1 July 1949 and who thereafter continues as a member of a Reserve component without a break in such service, the anniversary date is the date on which he accepts an appointment or first enlists, as the case may be, as a member of a Reserve component. Once established, the anniversary date does not change unless the person has a break in his Reserve service, in which case a new anniversary date for point-credit purposes will be established effective on the date of reentry in a Reserve component.

An enlisted reservist who accepts an appointment as a reserve officer with *no break in reserve service,* does not get a new anniversary date since his *reserve* service is continuous. A Regular Navy enlisted man or officer who accepts an appointment as a Reserve officer does get a new anniversary date which is the date he accepts the Reserve appointment. All of the Regular Navy time is creditable at the rate of one retirement point per day as prior service.

Anniversary 'year' is any consecutive 365 (or 366) days beginning with the anniversary date.

Eligible or Ineligible Status

An "eligible status" is frequently referred to as "active status" meaning not ISL or Retired. For the purpose intended here, reference to "eligible status" or "ineligible status" will mean a status during which the reservist may or may not participate for retirement point credit.

Eligible Status

An officer is in an eligible status and *may* participate for retirement point credit if he is:

. . . In the Ready Reserve (USNR-R)

. . . On active duty

. . . On inactive duty but has a service obligation

The large majority of members of the Standby Reserve-Active (USNR-S1) are not permitted to participate for retirement point credit. Participation is restricted to those S1 members who still have a service obligation, those who have at least 18 years but less than 20 years satisfactory service, and those members screened from the Ready Reserve as key personnel on or before 31 July 1965.

Ineligible Status

An officer is in an ineligible status and *may not* participate for retirement point credit if he is:

. . . In the Standby Reserve-Active USNR-S1 (except as indicated above)

. . . On the Inactive Status List, USNR-S2

. . . On the Retired List or in the Retired Reserve

. . . On the Temporary Disability Retired List

In summary, the following items are emphasized:

1. The officer must be in an eligible status to earn points.
2. At least 50 retirement points are required during each anniversary year to earn a year of satisfactory service after 1 July 1949.
3. No more than 60 retirement points per anniversary year may be credited for authorized participation *other than* active duty or active duty for training.
4. There is no limit on the number of active duty or ACDUTRA points except that an officer may not receive more than 365 or 366 retirement points in any one anniversary year irrespective of the type of participation involved.
5. Only a relatively few members of the Standby Reserve-Active (USNR-S1) are permitted to participate for retirement point credit. The word 'Active' in the designation should not be misconstrued as a connotation that participation is creditable.

Determining Eligibility For Retired Pay

If you have completed 20 years of "satisfactory service", you are eligible—upon application—to receive retirement pay upon or after reaching age 60, subject to the following requirements:

. . . Your last eight years of qualifying service must have been served as a member of a Reserve component, i.e., years of service in which you have been credited with at least 50 retirement points while serving as a member of a reserve component.

. . . You must not be eligible for, or receiving, any other retirement pay for military service.

. . . Any member of a Reserve Component before 16 August 1945, must have served on active duty or active duty for training during the designated war time periods of World War I or World War II, or, active duty (other than active duty for training) during the Korean War.

. . . Any Reservist who meets the age and service requirements is eligible. Any former Reserve member (who chose to be separated rather than transfer to the Retired Reserve) who met the service requirements before separation is eligible to apply for retired pay at age 60.

Computation of Retired Pay

The Computation of Retired Pay chart accompanying this article gives the formula used in computing retired pay for completion of 20 years satisfactory service. The chart also contains a graph for estimating monthly retired pay. By applying basic pay and total retirements points credited at time of retirement, an officer can estimate his monthly re tired pay. The monthly base pay schedules shown are those in effect prior to 1 July 1968 and the example is predicated on that basis. Even though the example does not reflect the amount of monthly base pay as contained in the current pay schedules, it nevertheless can serve as a simple method for estimating retired pay by substituting the current rate for that shown.

Computation of Retired Pay

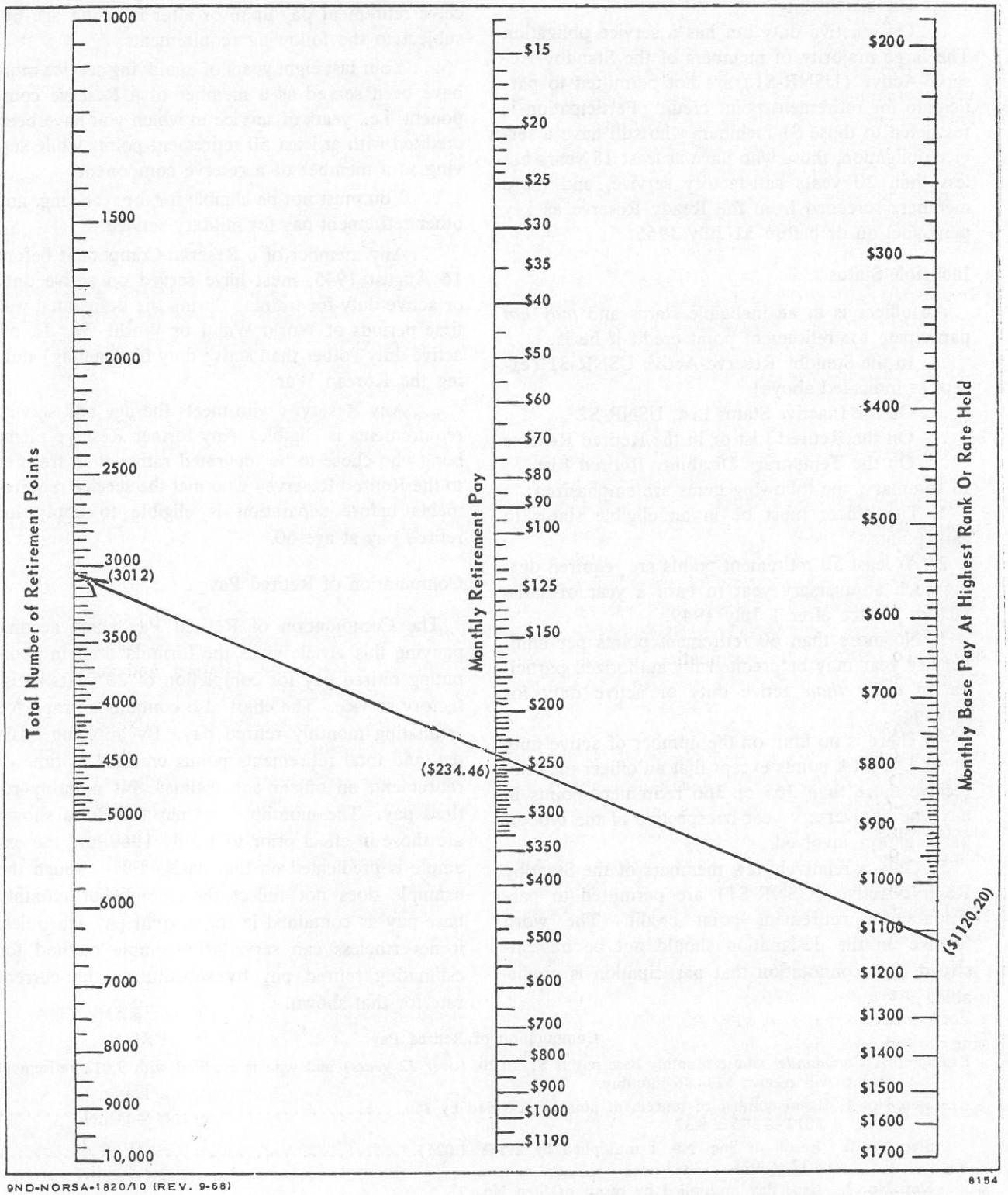
Example: A *Commander* whose monthly base pay is $1120.20 (*over 22 years*) and who is credited with 3,012 retirement points will receive $234.46 monthly.

Step No. 1 Total number of retirement points is divided by 360. . . . . 3012 ÷ 360 = 8.37

Step No. 2. Result of Step No. 1 multiplied by 2½% (.025). . . . . 8.37 × .025 = .2093

Step No. 3. Base Pay multiplied by result of Step No. 2 . . . . . .2093 × $1120.20 = $234.46

To estimate the approximate amount of your monthly retired pay on the below monthly retirement graph, find the number of retirement points in column 1 that you expect you will have at the time of retirement. Draw a line from this point to the amount of monthly basic pay in column 3 that you would be eligible for if you were on active duty at the time of retirement. The approximate amount of your retired pay will be that indicated where the line crosses column 2. The example in the below graph is that of the *Commander* referred to above.



DENTAL SECTION

PERSONNEL AND PROFESSIONAL NOTES

NAVY PERIODONTAL DISEASE SCREENING EXAMINATION

The two major oral health problems that affect naval personnel are caries and periodontal disease. This Bureau's attack on the dental caries problem has had far-reaching favorable results. Equally important in the objectives of the Navy's preventive dentistry program is a concerted attack on periodontal disease. SECNAVINST 6600.1 of 14 January 1965 established a Navy-wide preventive dentistry program which was principally caries oriented. SECNAVINST 6600.1A of January 1969 provides for a broad program of preventive dentistry including health education, prevention of dental caries and periodontal disease as well as research to find new and more effective methods of preventing oral disease.

To implement a Navy-wide program for the prevention of periodontal disease, this Bureau has developed, tested and evaluated a Navy Periodontal Disease Screening Examination over a period of 18 months at 12 Navy and Marine Corps dental facilities. The examination consists of two parts, (1) the determination of Navy Periodontal Disease Index Score and, (2) determination of Navy Plaque Index Score. To facilitate the examination procedure and to implement the program, two new NAVMED forms were developed. Navy Periodontal Disease Index, NAVMED 6600/1 (4-69), requisition number S/N 0105-216-6610, and Navy Plaque Index, NAVMED 6600/2 (4-69), requisition number S/N 0105-216-6620. The two forms may be requisitioned through normal supply channels after 1 August 1969.

All dental facilities will receive instructions for conducting and recording the Navy Periodontal Disease Screening Examination in July 1969.

If the Naval Dental Corps is to continue its leadership in preventive dentistry, it is important that all officers become familiar with this measure to prevent periodontal disease and support it completely.

APPLICATIONS FOR ADVANCED TRAINING

Dental Officers intending to submit application for assignment to long courses of instruction commencing in Fiscal Year 1971 are encouraged to do so at the earliest possible date.

Applications for full-time training in a civilian institution must be submitted via the chain of command so as to be received in the Bureau of Medicine and Surgery not later than 1 September preceding the year training will commence. Submission one year in advance enables those officers selected to meet application deadlines established by civilian universities.

Applications for postdoctoral fellowships, Graduate and Postgraduate Courses at the Naval Dental School and second and third year level training (residency type) at naval facilities must be submitted via the chain of command so as to be received in the Bureau of Medicine and Surgery prior to 1 December.

Dental officers applying for training should request the appropriate institution to forward predental and dental school scholastic record transcripts so as to be received by BUMED prior to the date specified for the application. Each candidate should include with his application a first and second choice of the type training desired. Also a statement concerning his background, interest, and reasons for requesting such training. Additional information and sample formats may be found in MANMED, Chapter 6, Section 16.

The 1969 revision of Dental Officer Education Programs, NAVMED P-5093, will be distributed to all activities having dental officers. This publication provides information for all educational programs available. The increasingly higher professional capability of dental officers may, basically, be attributed to the Naval Dental Corps educational programs.

RESEARCH INSTITUTE CONFERENCE ON RECRUIT DENTAL CARE PROGRAMS

A Dental Research Workshop on Naval and Marine Corps Recruit Dental Programs was held at the Naval Training Center, Great Lakes, from 21 to 23 April. The three-day session, hosted by the Naval Dental Research Institute, was attended by over

sixty-five Dental and Medical Service Corps Officers representing various naval activities. Representatives of the Army, Air Force and Veterans Administration, as well as several civilian consultants, also participated.

RADM Edward C. Raffetto, DC USN, Assistant Chief of the Bureau of Medicine and Surgery (Dentistry) and Chief, Dental Division, gave the opening address charging the workshop groups with the responsibility for critically examining the whole area of recruit dental care, defining the problems, and recommending future research that could be of assistance in solving them. "The end product will be better dental health for naval and Marine Corps personnel," Admiral Raffetto stated.

Highlighting the three-day conference was a tour of recruit training facilities under the direction of the Commanding Officer of Recruit Training Command, CAPT J. R. Collier, USN. Addresses were given by two eminent civilian scientists. Doctor Maury Massler, Assistant Dean, Postgraduate Education, University of Illinois College of Dentistry, spoke on "The Philosophy of Dental Care for Young Adults, 1969," and Doctor George W. Teuscher, Dean, Northwestern University Dental School, spoke on "Profile of the New Dentist—1969—His Hopes and Aspirations." Scientific paper were also read by participants representing all five Naval Training Centers and the Naval Dental School, Bethesda, Maryland.

Conference Chairman was CAPT Gordon H. Rovelstad, DC USN, Officer in Charge, Naval Dental Research Institute, Great Lakes.

In attendance at the conference were the five Senior Dental Officers from Navy and Marine Corps Recruit Training Centers. Other high-ranking officers attending were CAPT W. R. Stanmeyer, DC USN, District, Dental Officer, Sixth Naval District; CAPT W. E. Ludwick, DC USN, Staff Dental Officer, Headquarters, Marine Corps; CAPT J. F. Link, DC USN, Executive Officer, Naval Dental Clinic, Norfolk, Virginia; CAPT C. G. Veno, DC USN, Director, Dental Activities, Ninth Naval District; and CAPT C. A. Ostrom, DC USN, Staff Dental Officer, Naval Support Activity, Naples, Italy. Also in attendance were COL J. E. Cassidy, DC USA, and COL J. C. Kepper, DC USA, Surgeon General's Office, Department of the Army, LCOL A. G. Christen, DC USAF, Senior Dental Surgeon, Lackland Air Force Base; Dr. H. D. Killmer of the Office of the Assistant Chief, Medical Director for Dentistry, Department of Medicine and Surgery, Veterans Administration; and Dr. E. H. Porter, Technomics Incorporated, Silver Springs, Maryland.

WOMAN DENTIST ON ACTIVE DUTY

LT Helen M. Paulus, DC USNR, will begin a tour of active duty when she reports to the Naval Dental Center, San Diego, California in July.

Doctor Paulus was commissioned an Ensign, U.S. Naval Reserve while attending New Jersey College of Medicine and Dentistry, and was promoted to Lieutenant, Dental Corps, USNR, upon graduation in June 1968. The following month, she began a one-year civilian internship in oral surgery at Kings County Hospital, Brooklyn, New York.

Two women dentists have previously served in the Naval Dental Corps. The first, who was appointed in 1943, had the distinction of being the first woman to serve in any of the United States Armed Forces. A second woman dentist was appointed the following year, but neither remained on active duty after the termination of World War II.

NEW CORRESPONDENCE COURSE —OPERATIVE DENTISTRY

The Naval Dental School announces a new correspondence course for dental officers, *Operative Dentistry,* NavPers 10759-A, which consists of six assignments and is evaluated at 12 points, creditable toward the retirement of Naval Reserve officers.

The text for this course is *Textbook of Operative Dentistry,* 1967, by H. William Gilmore. Designed for the dental officer in general practice, the six assignments discuss the treatment and prevention of dental caries; selection of restorative materials, bases, and liners; and principles of cavity preparation and insertion of various restorative materials such as amalgam, porcelain inlays, and direct and cast gold.

Officers who received credit for the previous course, NavPers 10759, may enroll in the new course for additional credit.

NOTICE TO ACTIVITIES HAVING RITTER DENTAL EQUIPMENT

The Ritter Company has announced that effective immediately a $5.00 minimum order charge will be imposed on all replacement parts sold to the Gov-

ernment. This action was necessary due to the high cost of processing low dollar orders.

It should also be noted that the Federal Representative of the Ritter Equipment Company as published in "Information for Dental Officers"—7 April 1969, is in error. The correct information is as follows: In order to expedite the resolution of any problems encountered in the shipment and procurement of spare parts or technical information pertaining to Ritter Company equipment, it is suggested that dental activities experiencing such difficulties contact:

Ritter Company
400 West Avenue
Rochester, N.Y. 14611
ATTN: George Bleier
Dept. of Defense Section

PROFESSIONAL JOURNAL DONATION

The Dental Division, Bureau of Medicine and Surgery requests the donation of the Journal of Prosthetic Dentistry, Volume 19, Number 4, April 1968.

If anyone desires to donate a copy of this publication, please contact the Chief of the Bureau of Medicine and Surgery, Code 611, Navy Department, Washington, D.C. 20390.

The Naval Dental School needs copies of the following journals:

Journal of the American Society of Periodontists—Periodontics (JASP)

1963	Vol.	1	Feb,	Apr,	Jun,	Aug,	Oct,	Dec
1964	Vol.	2	"	"	"	"	"	"
1965	Vol.	3	"	"	"	"	"	"
1966	Vol.	4	"	"	"	"	"	"
1967	Vol.	5	"	"	"	"	"	"

Periodontics (formerly JASP), American Academy of Periodontology

1968 Vol. 6 Feb, Apr, Jun, Aug, Oct, Dec

If anyone has any or all of these editions he would care to donate to the School, please contact the Commanding Officer (Code E4), Naval Dental School, National Naval Medical Center, Bethesda, Maryland 20014.

PROFESSIONAL RELATIONS PROGRAM

DENTAL OFFICER ELECTED PRESIDENT—AMERICAN ASSOCIATION OF ENDODONTISTS

CAPT Warren J. Hedman has been elected president of the American Association of Endodontists. CAPT John F. Bucher is the president-elect and CAPT Worth B. Gregory is serving on the executive board. Thirty-one active duty naval officers and five retired naval dental officers participated in the 26th Annual Meeting of the Association held in Chicago, 17-20 April 1969.

DR. EMIL STEINHAUSER, UNIVERSITY OF ZURICH, LECTURES AT NAVAL DENTAL SCHOOL

Dr. Emil Steinhauser, Associate Professor of Oral Surgery, University of Zurich, Zurich, Switzerland, recently lectured at the Naval Dental School to staff and graduate dental officers on "Oral Surgery—Problems of Preprosthetic and Orthodontic Surgery."

This presentation concluded Dr. Steinhauser's U.S. lecture tour, during which he lectured on this subject at Mount Sinai Hospital, N.W.; Naval Hospital, St. Albans, N.Y.; meetings of the International Cleft Palate Society, Minnesota State Dental Association, and Kansas City (Mo.) Dental Society; Mayo Clinic; Washington University, St. Louis; University of Minnesota; and University of Texas.

MEMORIAL HOSPITAL RESIDENT TRAINS AT NAVAL DENTAL SCHOOL

For over ten years, the Memorial Hospital for Cancer and Allied Diseases, New York City, has provided observership training for naval dental officers enrolled in residency programs in oral surgery, oral pathology, oral medicine, periodontics, prosthodontics, and maxillofacial prosthetics. Recently the Naval Dental Corps provided training for one of the Hospital's residents.

LT Robert L. Castellano, DC USNR, reported to the Naval Dental School for 2 weeks of active duty for training. Being a resident in maxillofacial prosthetics and prosthodontics, he was assigned to the

Maxillofacial Prosthetic Division where he studied the treatment of traumatic wounds and new techniques developed at the Naval Dental School, including methods of constructing cronical prosthesis and artificial eyes.

The residency in maxillofacial prosthetics and prosthodontics at "Memorial" is directed by CAPT James B. Lepley, DS USN (Ret). Dr. Lepley became chief of the dental service at the Memorial Hospital for Cancer and Allied Diseases in 1966.

JOINT DENTAL MEETINGS

The Dental Department, Naval Air Station, Corpus Christi, Texas, hosted the Nueces Valley District Dental Society of Corpus Christi. CAPT V. P. Knapp, DC USN, is the Senior Dental Officer.

The Naval Dental Clinic, Philadelphia, Pennsylvania, hosted the Philadelphia County Dental Society. The Commanding Officer is CAPT J. L. Biedermann, DC USN.

The prosthodontic residents at the Naval Station, Treasure Island, presented a program to the Bay Area Armed Forces Study Group. Dental officers from all of the uniformed services in the Bay Area attended. CAPT T. A. Lesney, DC USN, is the Senior Dental Officer.

The Fourth Force Dental Company, Camp Lejeune, North Carolina, commanded by CAPT T. R. Hunley, DC USN, hosted a meeting for military and civilian dentists. The speaker was Doctor Baxter B. Sapp, Jr., Dental Diagnostic Clinic, Duke University Medical Center, Durham, North Carolina.

The members of the Jacksonville (Florida) Dental Society were guests of the dental officers in the Jacksonville area. The annual meeting was held this year at the Naval Air Station, Cecil Field, where CAPT E. G. Hutton, DS USN, is the Dental Officer.

ARTICLES AND ABSTRACTS

AN EVALUATION OF BONE SURGERY IN PATIENTS WITH IMMEDIATE DENTURES

L. Wictorin, J Prosth Dent 21 (1): 6–13, January 1969.

Historically, three general methods of surgery preceding immediate denture insertion have been practiced. First, extensive bone removal which is thought to provide space for the labial denture flange, to improve denture function by improving the form of the ridge, and to reduce bone resorption which has the effect of stabilizing the shape of the supporting tissues. Second, limited bone removal, the purpose of which is to eliminate undercuts and remove irregularities. Third, no bone removal is advocated.

After extraction the following changes in bone have been observed: There is resorptive activity in the labial plate during the first 40 to 50 days. The calcification of the socket is complete after 8 to 12 months. Vertical resorption (mean 2 to 6 mm) is greater than horizontal resorption (mean 2 to 4 mm). The total reduction of the bone crest is 15 percent of the total alveolar bone process within the first 90 days of healing and 25 percent during the first 12 months of healing.

It was thought that the denture itself or too great a vertical dimension of occlusion was responsible for these resorptive changes. It is now well documented that a well fitting denture is a positive factor in the healing process. It has been shown that bone resorption is less with immediate denture insertion than when dentures are inserted 90 days after extraction. Likewise, histologic studies have shown that bone formation advances more rapidly with immediate denture insertion than when no denture is placed.

In order to preserve as much of the volume of alveolar ridge as possible the recommendations are therefore to perform no bone surgery at the time of extraction and to utilize well planned immediate dentures.

(Abstracted by CDR Noel D. Wilkie, DC USN.)

VITAL ROOT RESECTION

E. William Haskell, Oral Surg 27(2):266–274, Feb 1969.

Indications for vital root resection, a step-by-step procedure, and results of resecting either a distobuccal or mesiobuccal root of 10 periodontally involved maxillary molars are discussed. Indications are (1) hopeless periodontosis involving only one of two or three roots, and (2) alveolar atrophic conditions.

Primary periodontal treatment must be accomplished prior to root resection, which is carried out in a saliva-free field with a No. 702 tapered fissure bur under a flow of normal saline solution. The cut is made at an angle and is extended from as close to the crown as possible to the exact point of furcation. A small elevator and root tip forceps are used for root removal. The operative site is packed with sterile gauze for 2 to 3 minutes to facilitate clotting; then the canal and root stump are cleansed with clear Mercresin solution and again packed with gauze. A small preparation is made in the exposed root canal with a sterile No. 35 inverted-cone bur. This is lined first with calcium hydroxide and then with fluid ZnOE cement, both carried to place with an explorer tip. Finally, a thin amalgam restoration is carefully inserted with as little pressure as possible.

During the first postoperative week, no painful reaction occurred in any of the 10 cases studied, but sensitivity to extreme temperatures, especially cold, developed after 7 to 12 days and usually persisted for about 2 months. There was tenderness for 5 months in one case, and one case required endodontic treatment. After periods ranging from 6 months to 6 years, all teeth are functional, six support fixed or removable prostheses, and the pulps of nine are vital.

(Abstracted by LCDR Thom H. Champman, DC USN.)

THE BIOLOGY OF THE ENDODONTIC PATIENT: III. VARIABILITY IN PERIAPICAL HEALING AND BLOOD GLUCOSE

E. Cheraskin and W. M. Ringsdorf, Jr., J Oral Med 23(3): 87–90, July 1968.

The purpose of this study was to determine the usual sequence of events following routine endodontic therapy and also whether it is possible to explain variations in the sequence on the basis of carbohydrate metabolism. The study included 25 nondiabetic patients, from 10 to 79 years of age, who were to receive routine root canal therapy for teeth with radiographic evidence of periapical pathosis. Roentgenograms were made before, during, and at regular intervals after treatment, and the course of healing was recorded by measuring the decreasing size of each periapical radiolucency.

On the basis of 2-hour postprandial blood glucose levels, the patients were divided into two groups, one composed of 13 subjects with levels of 70 to 89 mg percent and the other of 12 subjects with levels of 90 to 110 mg percent. All periapical radiolucencies decreased in size at similar rates during the first 10 weeks after treatment, after which the rates for the two groups began to diverge. At 30 weeks, the mean reduction in size of periapical radiolucencies was 74 percent for the group with the lower blood glucose levels, as compared with a mean reduction of only 48 percent for the group with higher blood glucose levels. The 2-hour postprandial blood glucose level therefore appears to be a predictor of the periapical healing rate following routine endodontic therapy.

(Abstracted by LCDR Edmond M. Osetek, DC USN.)

THE DENTAL PATIENT WITH A HEART VALVE PROSTHESIS

W. K. Bottomley, DDS, P. W. Willis, III, MD, and F. R. Fekety, Jr., MD, Mich Dent Assn J 51: 149–151, April 1969.

With the establishment of each new frontier in medicine and surgery, the concomitant revelancy of dentistry in the overall patient management must be assessed. This article presents for the first time the combined views of the dentist, the cardiologist and the internist on the complete dental care of the patient with a heart valve prosthesis. The special considerations of the prevalence of prosthetic valves, the hazards of endocarditis, the "unusual" organisms responsible for endocarditis, anticoagulant therapy, and audibility of the prosthesis are discussed. Specific antibiotic prophylaxis regimens are outlined for both in patient and outpatient dental treatment. Recommendations are made for the preoperative dental preparation and the postoperative dental management of the patient. With more than 75,000 prosthetic valves now implanted, this unique patient and his particular problems deserve immediate recognition by the dental profession.

(Abstracted by CDR William K. Bottomley, DC USN.)

NURSE CORPS SECTION

LEGAL COMMUNICATIONS

Helen Creighton, R.N., M.A., J.D., was a recent guest speaker at the Nursing Inservice Lecture Series, Naval Hospital, Pensacola, Flordia. Dr. Creighton is Nursing Care Advisor, Barnes Hospital, St. Louis, Missouri. The first half of Dr. Creighton's lecture on Legal Communications is presented in the following text.

Verbal Orders

Unless a specific statute relating to a particular function prescribes the manner of issuing or executing medical orders, they are not required to be in writing. Nevertheless, the orders of the physician should be in writing; this is necessary for certainty, clarity and proof (evidence) of what the physician did in fact prescribe. Hospital policy, therefore, quite uniformly requires that physicians' orders be in writing. As Emanuel Hayt has pointed out in an emergency, a nurse may use her own judgment in accordance with hospital policy until instructions are received from the attending physician.[1] He further states that if an order is telephoned, the physician should sign it on his next visit. As he points out the nurse should act only on written orders where the law requires it as in dispensing narcotics.

The principal federal narcotic statutes are (1) the Act of May 26, 1922, amended, and known as the Narcotic Drugs Import and Export Act;[2] (2) the Harrison Narcotic Act;[3] (3) the Marihuana Tax Act;[4] and (4) the Narcotics Act of 1960.[5] As Stetler who is general counsel and director of the legal and socio-economic division of A.M.A. states:[6]

"The furnishing of narcotics pursuant to a telephone order of a physician is prohibited, whether a prescription covering such orders is subsequently received or not. In an emergency, however, a druggist may deliver narcotics through a responsible employee or agent pursuant to a telephone order, provided that the employee or agent receives a properly prepared prescription before delivery is made; such prescription must be turned over to the druggist and filed by him as required by law."

Lesnik and Anderson have stated the matter correctly: "Prevailing practice to the contrary, the execution of such orders (narcotic) is illegal unless they are pursuant to written directions."[7] It seems to me that proper anticipation of needed medical orders obviates the cited problem of a 3 A.M. renewal of a narcotic order. The order of a non-narcotic drug for relief of nausea could be handled, if necessary by telephone, as suggested.

Interpretation of Orders

What is the responsibility of a nurse who is uncertain about the correctness of a medical order as she interprets it? The celebrated case of *Norton* v. *Argonaurt Insurance Co.*[8] where the nurse's failure to clarify a medication order about which she had strong misgivings with the prescribing physician led to the death of a three-month old patient makes clear the need of effective communication between physician and nurse. It is imperative that nurses have an opportunity to secure clarification of orders subject to alternative interpretations without feeling they are infringing on the doctor's prerogative. Although at times this may seem to be a problem to the nurse and may not be appreciated by all physicians, the standard of care required in such a situation is such that no equally 'ordinary, reasonable and prudent" course of action is open.

Evaluation, Reporting and Recording

As Lesnik and Anderson pointed out in their discussion of nursing functions, the nurse's responsibility to observe and evaluate extends to the whole management of the patient based upon the physical, biologic and social sciences and not limited to instances involving the execution of medical orders.[9] In *Burns* v. *Bakolite Corp.*,[10] the widow of an employee sued the Corporation claiming their industrial nurse was negligent in causing her husband's death and sought damages under the rule of *respondent superior*. The court opinion there is authority for the independent obligation of the nurse to observe, diagnose, decide and adopt a course of action to avoid the aggravation of a condition (heart attack). It emphasizes the responsibility of professional nurses to evaluate their observation of symptoms and to exercise judgment.

The inclusion of recording and reporting within statutory definitions of nursing compels the nurse to assume responsibility. The chief distinction between professional and practical nursing in the area is that the professional nurse should be expected to record not only the obvious facts but evaluations upon which

care and treatment depend. The practical nurse/corpsman should be limited to the responsibility of recording and reporting the obvious facts, things the person has said or done.

Comments about the patient's emotional state should be in the form of facts. Likewise comments relative to alcoholism and drug ingestion should be limited to facts on the chart and only what is necessary, likely, for treatments. One has to exercise care and prudence in such matters and such charts should be guarded from being accessible to unauthorized persons. The law will not tolerate vicious, unfounded and/or unnecessary statements concerning another's capacity or the trade, business or occupation from which he gains his living. Any defamatory remark made falsely concerning the competency or fitness of one to engage in his business, trade or profession is slander or libel actionable per se. Truth in most states is an absolute defense to such an action. However, it should be appreciated that when truth is used as defense to an action, the entire defamatory statement must be proved to be true and not simply a part of it.

To my knowledge, Flordia does not have a privileged communication statute. In states which have such statutes, the nurse as well as the physician may be covered. In *Clark* v. *Geraci*[11] the Court said that the revelation of information obtained by a physician in a professional capacity, without the consent of the patient, is sufficient for awarding damages. The plaintiff had been discharged as a civilian accountant for the Air Force. He sued the physician for revealing to the Air Force that alcoholism was the underlying reason for his absences from work. To explain the patient's absences from work on a number of occasions, the physician at the plaintiff's request had given him incomplete medical certificates. The doctor informed him that finally the Air Force requested complete information. The plaintiff claimed he had asked the doctor not to disclose his alcoholism to his employer but that he did so anyhow. The court held the physician was free from liability because the patient by his actions had waived his right to secrecy. Nevertheless, much care should be exercised in charting such matters.

Time lapses on charts are damaging—they raise a question in the mind of some as to whether the patient did in fact receive reasonable and competent care. To others, they suggest that some unfavorable evidence is being withheld. Blank spaces in the nurse's charting should not be allowed; if any occur a line should be drawn through the blank space to prevent its misuse at a later time.

Test Results

Whether the charting of laboratory findings and reports is the work of the nurse depends upon the hospital. In some hospitals, it is the duty of laboratory people to enter their own reports in the appropriate section of the chart. Familiarity with the findings of tests and the meaning thereof is part of the overall picture of the patient which the nurse is expected to have. Generally speaking, too, the nurse is expected to know the pertinent findings on consultants' reports and their implication for nursing care.

Prudence and tact should characterize the nurse's answers to the questions of relatives. The nurse should always be attentive to such questions and where they go beyond the scope of her duties, she should refer them to the appropriate person for answer. Physicians vary in how much and what they wish a nurse to discuss with the patient; and we should work cooperatively with them in this matter. It seems to me that we do well to bear in mind the right of every individual to privacy; to withhold himself from public exposure and scrutiny. Simply because a person may be a blood relative of a patient does not mean that the patient chooses to have the intimate details of his diagnosis, prognosis, and so forth discussed with such a relative. I am constantly reminded of the late President Coolidge's comment, "I notice what I have never said never got me into any trouble." The art of being pleasant and gracious to relatives of patients while discreetly giving little private information concerning them is one that every nurse should cultivate. To be sure former President Eisenhower as an elder statesman was a famous person and as such much information concerning his life was newsworthy and "belonged to the public." All the same anyone with a modicum of sensitivity noted Mrs. Eisenhower's comment in reply to whether she missed being in the White House, "Anyone who has been in the blare of publicity would not, I think, seek it again." That recoil from intrusion into the details of one's life, everyone feels; respecting feelings should be a matter of manners rather than law even though in the more flagrant cases there is a legal remedy.

Discussions of treatment and nursing care with staff at exchange of report should be "SPECIAL" meaning it should

*S*uccinctly state
*P*ertinent facts from
*E*fficiently assembled

*C*oncrete data and be so
*I*nformative that
*A*ll will listen carefully since it
*L*asts not over ten minutes!

This type of report will give adequate direction and supply material, relevant facts which enable the succeeding shift to proceed to duty with a minimum of delay while eleminating the objectionable features of the typical "Brook report" of which the poet said, "Men may come and men may go But I go on forever." Too often such a babbling "Brook report" fails to alert personnel to essential points of operation while breaching privacy and confidential communications in Chatty Cathy style. Brevity and only the most essential operational facts should characterize a nursing report, and discussions of treatment and nursing care belong in a conference.

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RESEARCH SECTION

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PREVENTIVE MEDICINE SECTION

SALT: THE FIFTH ELEMENT—PART II

Bea Hopkins, Mankind 1(9):53–59, 78–79, Oct 1968.

While New World pioneers were coping with finding salt, the Old World was still weighed down with practices restricting the full exploitation of salt resources. Discovery of new ocean routes and of the Americas had led to an expansion of trade over the 7 seas. European commerce, which had for 3,000

years been centered in the Mediterranean, began from the Middle Ages on to shift to the Atlantic seaboard. Wherever raw materials were found, cities grew—sometimes on the site of old fairs where trade had been sufficiently profitable for merchants to settle down. A vast trade in salt was carried on between England and the Continent. Tradition has it that high water on the River Thames often delayed salt shipments long enough that small settlements sprang up. Those small settlements are now the City of London.

Salt became an ideal commodity on which to levy taxes. From 1300 on every feudal baron in France and England levied tolls and *peages* on salt if his land lay by a saltway. But even then the idea was hardly new. The Chinese from 561 to 583 A.D. levied taxes on seawater, salt marshes, and salt springs. Emperor Yu of China ordered the Province of Shantung in 2205 B.C. to provide his court with salt. The Ptolemies of Egypt and the Seleucids of Syria, as well as the Romans, levied taxes on salt from their own pits the same as it was levied on caravans that transported salt across the desert.

National systems of taxation as well as monopolies grew out of these local dues. At Venice in Italy no man could buy more salt than he could personally use within the city. If he attempted to do so he lost an ear! In France the selling of salt was forbidden in many places because bay salt brought the king more money in taxes. At the beginning of the 17th century one observer wrote, "France has 4 loadstones to draw treasure—namely Corn, Linen Cloth, Wyne and Salt—but through the tribute on wyne be great, that of salt be greater!"

The earliest tax on salt in France was imposed in Languedoc in 1920. By the 18th century there was a land tax, a poll tax, and a salt tax. Louis XVI's government levied heavy taxes on commoners. Every commoner over 8 years old was taxed on a minimum use of 3 quarts of salt per year (or ⅓ of an ounce per day) estimated to be consumed. The law did not allow Frenchmen to use seawater in cooking or manufacturing, to pasture cattle in salt marshes or water them at salt springs.

Because of harsh taxes imposed salt smuggling was widespread. To suppress it 50,000 troops and agents were employed and 11,000 people were arrested in one year for violating salt laws. The cost of collecting salt taxes was estimated to be a third of the income received from it! One of the causes leading to the French Revolution was said to be salt taxes.

In England the situation was similar, and monopolies with vested interests gradually strengthened their controls over the salt trade. The town of Droitwich, previously known as Wych, was granted a charter by King John in 1215. *Droit,* a Norman-French term for "tax" or "duty", was considered a royal privilege and underlined the importance of the town's salt industry. Droitwich was originally given the right to hold a market by King Ethelbald in 860 A.D. but Roman remains discovered indicate a much earlier cognizance of the town's importance. Brine obtained there manifested itself in the form of 3 separate shallow springs which were fed from a natural lake of brine underlying the town. The salinity of these springs varied depending upon their depth, but it was thought to be stronger than the Dead Sea.

So precious were these springs that one Saxon king built his palace near the town to protect them. Grants of salt revenue were endowed to the church and one, called Dodderhill, was described as "looking down on the dirty, wealthy little valley town engaged in producting the best salt in the world!" The Domesday Book of about 1086, which was the first census of resources taken in England after Roman occupation, included many Latin references to salt production at Droitwich and well illustrates how salt influenced the social and economic structure of the country.

At different times in the history of the town the springs, or pits as they were called, dried up and after one such breakdown Henry III, concerned about their failure, ordered his sheriff to investigate the reasons. It seems the pits were in dire need of repair. For this reason during the later reign of Edward I in 1300, it was thought the problems of commercial salt production should be given over to a body of men called burgesses who were appointed to oversee and regulate the salt trade. They drew up rules governing the clearing and repair of the pits and fixed the price of salt, regulating it with local bylaws which stipulated that salt could not be traded for pears and apples!

Distribution of brine from the springs was handled with rare justice. Measures made up of 216 large vessels were used. As the brine was pumped out of the well, it was handed to sworn officials called *tyesmen* who divided it up into proportions which insured everyone a standard sample. Because the strongest brine lay at the bottom of the well, the middle being weaker and the top weaker still, a *phate* or share when measured had to contain a third part of each. These grades were referred to as "first man," "middle man," and "last man."

Kings owned *phates* or shares in the pits as did noblemen. Others might own one share, or just a quarter. Possession of even a quarter carried with it the privilege of burgess—a position which could be inherited or handed down in the same way as land to the holder's children. These prerogatives which gave burgesses control of the salt trade created a system of protection for the salt makers. In England as in France people were seized for salt smuggling and some were even sent to the gallows! Of all the revenue from salt taxes collected throughout England, Droitwich by the end of the 18th century was paying one third.

Because the widespread practice of salt taxes and monopolies had grown to such great proportions since biblical times, every attempt to improve or develop the industry had been defeated. Considerations of revenue to the Crown of England, as in France, discouraged new techniques. When two Englishmen, Dr. George Fordyce and his brother Alexander, succeeded in separating sodium and chlorine in salt, they fell afoul of the Salt Department and its considerable revenue interests. Not until 1825 was the salt duty finally repealed in England. Although the price of salt fell from 36 cents a bushel to five cents, trade was so stimulated companies offered financial reward for better applications of the product.

Ironically at Droitwich in 1831 is was discovered hot brine cured a patient of cholera—an incident which led in succeeding years to demise of salt production in the town and its establishment as a spa for arthritic patients which it is today. The springs, therefore, which for 2,000 years provided salt for man't inner benefit, now feed baths of brine instead and therapeutically are to man's outer benefit!

A major source of salt for the Soviet Union is Lake Baskuntschak in the Southern Ural Mountains. As late as 1930 salt was carried in little carts to railroad terminals for shipment throughout Russia.

An Industrial Revolution which found new and more economical methods of production, far from diminishing the uses to which salt was put, only increased demand. Fisheries, like farmers and the food industry, generally were great users of salt. In North Carolina milions of shad and herring were salted every year. Farmers, before they learned to grow winter feed, killed off all animals, except those kept for breeding, and salted them down during the winter months. In American packing houses during a season which ran from December to February 3 million head of hogs were cured in 1860-1861. Experts ruled that beef and mutton required 3.6% its weight in salt to ensure its keeping qualities, while pork required 25%.

English ships calling at southern ports in America imported 12 million bushels of salt per year which proved a profitable cargo because they could use it as ballast. It was this reliance on imported salt which proved an insurmountable barrier to the South during the Civil War. In 1861 Mark Twain wrote he saw a sack of salt on a New Orleans levee. One night it was worth 2 dollars—the next it was worth its weight in gold.

Kanawha, in Virginia, was an important salt producing center at the time. The grandfather of General George Patton III was a commander of a crack company called the "Kanawha Rifles," which was made up of salt making families. Soon after the war began Kanawha fell to the North, and although it was retaken a year later it fell again. Saltville, which was high in the Alleghenies, was developed as an alternative source and production there redoubled. Individual companies sent up a force of workmen to make salt for their separate needs. From all directions came heavy wagons, while a force of Grey's cavalry and infantry stood by to guard the salt.

A Civil War account describes Judge Avery's plantation on Isle Petite Auce in Louisiana "like a piece of New England dropped there by mistake." Insugar and cotton its productiveness is very great; as also in the matter of snakes, alligators, and mosquitos, in which latter it is extremely rich; but its crowning glory . . . is the salt mines which were discovered at a time when the South, by the destruction of the salt-works along the coast and in Virginia, was almost at a standstill for want of that article. A negro digging a well struck the deposit . . . perfectly pure and of immense extent. It was placered among the States, the different pits being designated by the names of the States for whose use they were sunk." About the same time, Austrian workers dug salt in tunnels at the Wieliczka mines. Yields from natural deposits of rock salt were greater than from brine and far easier to extract.

At Richmond, Virginia, immunity from military service was offered all men who would work the kettles. Screened behind semi-tropical foliage, these volunteers made as much as 1,800 bushels of salt per day. Since there was a shortage of iron for kettles and pans, they used instead old harbor buoys sawed in half to make kettles holding 150 gallons of brine each.

In some isolated sections of the South, salt was so scarce during the war people were reduced to digging

out the earth from underneath smokehouses and boiling it to get what salt they could. In southern Alabama thousands flocked to the Tombigbee River in the southwest corner of the state to make salt and also to buy it. Wagons clogged the road approaches to the river for miles in every direction. Drawn by 2 or 4 mules, each wagon was filled with old syrup kettles, wash boilers, pans, provisions, and even poultry—anything and everything that could be pressed into service to exchange for salt, or needed in making it.

Although the furnaces built were crude and temporary, they were most imaginative. Depending upon the salinity of the water, which varied at flood time when fresh water emptied into it, they were able to obtain from 20 to 35 bushels of salt per day. New flat-bottomed kettles they designed were fairly shallow, much like the Roman and English pans had been, except they were larger and held 100 gallons of brine. It is also interesting that a Confederate soldier's allowance of salt, 1½ pounds per month, was similar to that issued Caesar's soldiers.

Besides quantities needed for human consumption, salt was also being used in huge quantities in the manufacture of explosives, as well as for tanning hides for harnesses and leather. Cavalry companies particularly needed salt for their horses as well as men, and Lee's bony horses developed a fierce irritating tongue and mouth disease traceable to the absence of salt in their forage. These 4 legged suffers fared no better than their 2 legged masters in the darkest days of the war. Nevertheless, even when there were only parched corn and rind of bacon to eat, Confederate officers did try to give their troops at least on ounce or two of precious salt.

When the war was over, one ex-Confederate officer lecturing in the North announced to his startled audience, "You know why you Yankees licked us Rebels? It was because you had plenty of salt!" Certainly it was no coincidence that Lee finally surrendered to General Grant on April 9, 1865, shortly after the last certain supply of salt had been cut off.

Political boundaries and trade controls were formed by patterns of early salt production. Conflicts like the recent Arab-Israeli war over the flow of supplies along the Gulf of Akaba bear striking resemblance to ancient conflicts between the Phoenicians and Egyptians in the same area and for similar reasons—the free flow of goods and raw materials.

The economic exploitation of raw materials has advanced beyond man's wildest dreams. Today the United States alone produces over 36 million tons of salt annually, almost 75% of which is used by chemical industries. Contrary to popular conception, the housewife accounts for only a small part of salt used. With the exception of only the primitive peoples of our 20th century world, the saltcellar is so commonplace as to be overlooked or taken for granted.

Desalting of water so urgently carried on in the past to procure salt is now carried on more urgently to procure fresh water. In 1952, during the Administration of President Truman, the Office of Saline Water, a branch of the Department of the Interior, was formed to handle two tasks—the conversion of seawater for residents of coastal areas and the purification of inland waters which were brackish.

Funds were obtained to build 5 saline water, nuclear-powered conversion plants, each by a different method to observe their relative advantages. The first of these went into operation in 1961 and was dedicated by President Lyndon Johnson at Freeport, Texas. This was 9 years after the office had opened.

In spite of the fact that we have come a long way from wood fuel to nuclear energy, the cost of generating heat can still be a costly process. Economically it is not yet feasible for us to obtain dry salt and pure water by the same process. The 5 plants built, are at most compromises in the total conversion of seawater to fresh water which at 500 parts per million salt saturation is considered drinkable. To take the process further to the stage where dry salt is obtained can cost almost 4 times as much, depending upon the salinity of the water supply available. Consequently, brine left after drinkable water has been obtained is dumped back into the sea.

While the answers to age-old problems may lie in the past each new generation seeks to find his own answers in the future. So the 20th century man, waiting for new thinking and new innovations, finds himself still in conflict with the environment he has made for himself. And regardless of historical precedent, changes are more often than not viewed with apprehension while need waits for conviction.

PRELICENSING STATEMENT ON RUBELLA VIRUS VACCINE

USDHEW PHS NCDC Morb & Mort Wkly Rep 18(15):124–245, April 12, 1969.

Introduction

The live, attenuated rubella virus vaccine soon to be licensed is a highly effective immunizing agent and the first suitable method of controlling rubella.

Rubella is generally a mild illness, but if the infection is acquired by a woman in the early months of pregnancy, it poses a direct hazard to the fetus. Preventing infection of the fetus is the principal objective of rubella control. This can best be achieved by eliminating the transmission of virus among children, who are the major source of infection for susceptible pregnant women. The live, attenuated rubella virus vaccine is safe and protective for children, but not for pregnant women because of an undetermined risk of the vaccine virus for the fetus.

Rubella

Rubella is one of the common childhood exanthems. Most cases occur in school-age children particularly during the winter and spring. By early adulthood, approximately 80 to 90% of individuals in the U.S. have serological evidence of immunity.

Rubella is clinically variable, and its common features, such as post-auricular and sub-occipital lymphadenopathy and transient erythematous rash, are often overlooked or misdiagnosed. A mild febrile illness may not be recognizable as rubella, and moreover, subclinical infection occurs, which further decreases the reliability of clinical history.

Compliciations of rubella are rare in children, but in adults, particularly women, the illness is commonly accompained by transient polyarthritis. Far more important is the frequent occurrence of fetal abnormalities when a woman acquires rubella in the first trimester of pregnancy.

Rubella Immunity

Immunity following rubella appears to be long lasting, even after mild illness of clinically inapparent infection. The only reliable evidence of immunity is a positive serological test. However, because of the variation among reagents and technical procedures, results of serological tests should be accepted only from laboratories of recognized competency that regularly perform these tests.

At the present time, the hemagglutination-inhibition (HI) antibody determination is particularly useful for evaluating immunity. It is a rapid and sensitive procedure. The complement fixation (CF) and other serological tests are less useful.

Live Rubella Virus Vaccine

Live rubella virus vaccine is prepared in cell culture of avian or mammalian tissues. It is administered as a single subcutaneous injection. Although vaccines shed virus from the pharynx at times for 2 or more weeks after vaccination, there is no clear evidence of communicability. Approximately 95% of susceptible vaccinees develop antibodies, but titers are lower than those observed following natural rubella infection. Recent investigations have shown that vaccination affords protection against illness following either natural exposure or artificial challenge.

Antibody levels have declined very little during the 3-year period of observation of children who were among the first to be immunized with rubella vaccine. Long-term protection is likely, but its exact duration can be established only by continued observation.

More than 30,000 susceptible children have received live rubella virus vaccine in field investigations, with almost no untoward reactions. Only rarely has transient arthralgia or evanescent rash been reported in children.

Many susceptible women have had lymphadenopathy, arthralgia, and transient arthritis beginning 2 to 4 weeks after vaccination; however, fever, rash, and other features of naturally acquired rubella have occurred less commo . Not enough susceptible men have been vaccinate to show wh ther they experience comparable reactions as fr ntly as women.

Recommendation for Vaccine Use

Live rubella virus vaccine is recommended for boys and girls between the age of 1 year and puberty. Vaccine should not be administered to infants less than 1 year old because of possible interference from persisting maternal rubella antibody.

Children in kindergarten and the early grades of elementary school deserve initial priority for vaccination because they are commonly the major source of virus dissemination in the community. A history

of rubella illness is usually not reliable enough to exclude children from immunization.

Vaccination of adolescent or adult males is of much lower priority because so few are susceptible. However, the vaccine may be useful in preventing or controlling outbreaks of rubella in circumscribed population groups.

Pregnant women should not be given live rubella virus vaccine. It is not known to what extent infection of the fetus with attenuated virus might take place following vaccination, or whether damages to the fetus could result. Therefore, *routine* immunization of adolescent girls and adult women should *not* be undertaken because of the danger of inadvertently administering vaccine before pregnancy becomes evident.

Women of child-bearing age may be considered for vaccination only when the possibility of pregnancy in the following 2 months is essentially nil; each case must be considered individually. This cautious approach to vaccinating post-pubertal females is indicated for two reasons: First, because of the theoretical risk of vaccination in pregnancy, and second, because significant congenital anomalies occur regularly in approximately 3% of all births, and their fortuitous appearance after vaccine had been given during pregancy could lead to serious misinterpretation.

If vaccination of a woman of child-bearing age is contemplated, the following steps are indicated:

1. Optimally, the woman should be tested for susceptibility to rubella by the HI test (See *Rubella Immunity*).
2. If immune, she should be assured that vaccination is unnecessary.
3. If susceptible, she may be vaccinated only if she understands that is is imperative for her to avoid becoming pregnant for the following 2 months. (To ensure this, a medically acceptable method for pregnancy prevention should be followed. This precaution also applies to women in the immediate postpartum period.) Additionally, she should be informed of the frequent occurrence of self-limited arthralgia and possible arthritis beginning 2 to 4 weeks after vaccination.

Use of Vaccine After Exposure To Natural Infection

There is no evidence that live rubella virus vaccine given after exposure will prevent illness. There is, however, no contraindication to vaccinating children already exposed to natural rubella. For women exposed to rubella, the concepts listed previously apply.

Precautions in Using Live Rubella Virus Vaccine

Pregnancy: Live rubella virus vaccine is contraindicated. (See *Recommendations for Vaccine Use.*)

Altered Immune State: Attenuated rubella virus infection might be potentiated by severe underlying diseases, such as leukemia, lymphoma, or generalized malignancy, and when resistance has been lowered by therapy with steroid, alkylating drugs, antimetabolites, or radiation. Vaccination of such patients should be avoided.

Severe Febrile Illness: Vaccination should be postponed until the patient has recovered.

Hypersensitivity of Vaccine Components: Rubella vaccine is produced in cell culture. Care should be exercised in administering vaccine to persons with known hypersensitivity to the species from which the cells were derived (indicated in the labeling). The vaccine contains a small amount of neomycin and should not be given to individuals known to be sensitive to this antibiotic.

Simultaneous Administration of Live Rubella Virus Vaccine and Other Live Virus Vaccines: Simultaneous administration of live rubella virus vaccine and other live virus vaccines should be deferred until results of controlled clinical investigations are available. Until then, it is recommended that rubella vaccination be separated by at least 1 month from administration of other live virus vaccines.

Surveillance

Careful surveillance of rubella infection is particularly important with an effective vaccine in use. Emphasis should be placed upon improved diagnosis and reporting of rubella, of the congenital rubella syndrome, and of complications of the disease. Competent laboratory investigation of all infants with birth defects suspected of being due to rubella is essential. It will likewise be important to observe patterns of vaccine use and determine their effectiveness.

USE OF A SINGLE ORAL DOSE OF DOXYCYCLINE MONOHYDRATE FOR TREATING GONORRHEAL URETHRITIS IN MEN

G. Domescik, et al., USDHEW PHS Public Health Rep 84(2):182–183, Feb 1969.

The continuing increase in strains of *Neisseria gonorrhoeae* which are relatively resistant to penicillin and the problem of allergy to penicillin create a need for evaluating alternate modes of therapy in gonorrheal urethritis.

Drugs which are absorbed by the blood in quantities adequate to produce cure when the patient is given a single oral dose usually are ideal for treating uncomplicated gonorrheal urethritis. Oral medications preclude painful injections and lessen the risk of anaphylaxis. A single dose is desirable because patients fail to complete longer treatment regimens.

When administered in a single oral dose, tetracycline and certain of its derivatives have been proved adequate in the treatment of uncomplicated gonorrheal urethritis. There are instances of gastrointestinal upset following dose as large as those required for a single oral dose regimen. Although the percentage of patients in whom such upsets develop is small, any treatment schedule which reduces these reactions would be desirable.

Doxycycline monohydrate, a tetracycline derivative, produces blood levels of antibiotic equal to or higher than the other tetracyclines given in smaller doses. The authors treated uncomplicated gonorrheal urethritis with a single oral dose of doxycycline monohydrate which might provide adequate therapy with a minimum of gastrointestinal intolerance.

Materials and Methods

Male patients with uncomplicated gonorrheal urethritis were selected for this study.

A clinical diagnosis of gonorrheal urethritis was made in patients having a purulent urethral exudate which on gram-stained smear revealed gram-negative intracellular diplococci morphologically typical of *N. gonorrhoeae*. The clinical diagnosis was confirmed by culture of the exudate on the Thayer-Martin selective medium.

Specimens for culture were obtained by intraurethral scrapings with a 2-mm platinum wire loop and were inoculated immediately on culture plates of Thayer-Martin selective medium and placed in a candle jar for incubation at 35° C.

Presumptive identification of *N. gonorrhoeae* was made on the basis of typical colonial morphology, oxidase reaction, and gram stain. Sugar fermentation studies were not made routinely. Cultures were not considered negative before 48 hours of incubation.

Each patient received 250 mg (5 50-mg capsules) of doxycycline monohydrate in a single oral dose and was instructed to return for reexamination in 96 hours. At the followup examination, intraurethral scrapings were again taken for culture.

Results

One hundred and 69 males ranging in age from 14 to 48 years and whose conditions were diagnosed as uncomplicated gonorrheal urethritis by the criteria described were studied. Of these, 158 patients returned for followup as instructed; 6 had positive cultures at the time of reexamination and were considered treatment failures. All other patients who returned were clinically and culturally negative upon reexamination 96 hours after initial treatment. Thus, among patients returning for followup as instructed, there was a failure rate of 3.8%.

The remaining 11 patients returned from 1 to 2 weeks after their condition was originally diagnosed and treated. Of these patients, 2 had positive cultures on the followup examinations. The others were clinically and culturally negative. Because of the time elapsed between original treatment and followup and since each of the late returnees admitted sexual contact after treatment, the cases of the 2 patients with positive cultures were very likely reinfections rather than treatment failures.

No statistically significant relationships between age, race, number of previous infections, or duration of symptoms and treatment failure were found.

Discussion

The cure rate in males with uncomplicated gonorrheal urethritis using a single oral dose of 250 mg of doxycycline monohydrate in this study was 95.3%. If the 2 cases which were most likely reinfections rather than treatment failures were excluded, the cure rate was 96.4%.

Only 1 case of gastrointestinal intolerance characterized by vomiting occurred. No other adverse side effects were noted.

Editor's Note: This interesting data might have been more meaningful had followup examinations been conducted after the 96 hour period in a greater percentage of the study group.

DENGUE HAEMORRHAGIC FEVER IN THAILAND

WHO Wkly Epid Rec 44(8): 144-149, Feb 21, 1969.

The following tables give the monthly figures of reported cases and deaths attributed to dengue haemorrhagic fever during the period June to Nov 1968 in the Bangkok-Thonburi Municipal Area, and separately for the rest of Thailand.

Out of a total of 71 provinces, 14 did not report any cases of dengue haemorrhagic fever in 1968. Of these 7 have never reported dengue haemorrhagic fever since 1965 when the weekly notification system was extended to cover the entire country.

Table 1.—*Cases and Deaths of Dengue Haemorrhagic Fever Reported from the Bangkok-Thonburi Municipal Area in 1968*

Month	Cases	Deaths
Jan-May	72	—
June	36	—
July	34	1
Aug	93	2
Sept	115	1
Oct	137	4
Nov	59	1
Total	59	1

Table 2.—*Cases and Deaths of Dengue Haemorrhagic Fever Reported from Thailand apart from the Bangkok-Thonburi Municipal Areat in 1968*

Month	Cases	Deaths
Jan-May	504	10
June	896	7
July	1218	5
Aug	1102	10
Sept	740	3
Oct	472	—
Nov	120	—
Total	5052	35

The average number of reported cases of dengue haemorrhagic fever per week in Thailand, 1965–68, is: 67—1965; 112—1966; 40—1967; 115—1968, and clearly indicates the biennial fluctuations in the reported number of cases of this disease.

Although this biennial accumulation of cases has followed a predictable pattern during the last years, this is not the case with the fatality rate, as will be seen from Table 3.

The marked decrease in the fatality rate in 1968 compared to previous years cannot be easily explained. It may partly be due to diagnostic difficulties in the reporting of presumptive cases, partly to an increased interest on the part of the medical profession in reporting mild cases, and perhaps partly due to a more efficient treatment of the shock syndrome.

Because of the widespread distribution of *Aedes aegypti,* the main DHF vector that depends on human habitats for breeding, dengue haemorrhagic fever is a potential health hazard in many areas where so far it has not been recognized. Taking into account the fact that outbreaks of dengue haemorrhagic fever may occur in areas of Asia where *Aedes aegypti* is found, WHO took steps in early 1965 to bring the disease gradually under international epidemiological surveillance. The first step in this programme has been to encourage governments in South-East Asia and the Western Pacific to establish medical monitoring centres in larger hospitals and out-patient units in urban areas. Side-by-side mapping of the distribution of *Aedes aegypti* and *Aedes albopictus* has been initiated with the collection of additional information concerning the density of the vector population and its insecticide-resistance pattern.

Because of the vagueness of the clinical picture of dengue haemorrhagic fever that is often met with, a document has been prepared by WHO laying down the main criteria for the dengue haemorrhagic fever syndrome. This document, which is reproduced below, has been given wide distribution in all coun-

Table 3.—*Reported Number of Cases of Dengue Haemorrhagic Fever in Thailand in 1965–68 and Fatality Rate in Percentage*

	1965		1966		1967		1968	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
	3466	150	5844	131	2060	64	5978	45
Fatality rate	4.3		2.2		3.1		0.8	

tries where dengue haemorrhagic fever is actually present or may be introduced.

Criteria for Diagnosis of Dengue Haemorrhagic Fever Shock Syndrome (DHFS)

Presumptive:

1. Abrupt onset of fever
2. Followed by sudden shock (Pulse pressure less than 20 mm Hg, or absent diastolic or absent systolic and diastolic pressure.) or collapse after 2 or more days.
3. With bleeding abnormalities

(1 or more of the following: positive tourniquet test (pressure cuff midway between diastolic and systolic pressures for 5–7 minutes), thrombocytopenia (< 100,000/mm), prolonged bleeding time or elevated prothrombin time).

N.B. Tourniquet test may become negative with severe shock.

Typical Clinical Course and Laboratory Findings

Patients (mostly children) characteristically have abrupt onset of fever accompanied by headache, nausea, vomiting, upper respiratory signs and abdominal pain. The fever persists for several days. On the 2nd to 6th day after onset there is sudden collapse or ill defined worsening in condition. The patient usually has cool clammy extremities, circumoral cyanosis, peripheral vascular congestion, and a weak thready pulse. The liver may be enlarged and, if so, is not tender. Moderate transaminase (SGOT) elevations are common.

On X-ray, there may be patchy pneumonitis and bilateral pleural effusions. ECG may show findings consistent with mild myocarditis. During shock stage, in addition to bleeding abnormalities, there is elevated haematocrit (20% above recovery value), hypoproteinemia (<5.5 gm%), and there may be metabolic acidosis, mild azotemia and moderate leucocytosis.

During convalescence there is frequently a bradycardia with ectopic ventricular systoles.

Haemorrhagic manifestations are not a constant feature. Most common are petechiae and ecchymoses at sites of trauma and venepuncture. Gastrointestinal haemorrhage is infrequent and may follow a period of uncontrolled shock. Epistaxis and gum bleeding may result in swallowed blood and a false diagnosis of bleeding of gastrointestinal origin.

A CASE OF HISTIOCYTOSIS —NEW JERSEY

USDHEW PHS NCDC Morb & Mort Wkly Rep 18(13): 107, Mar 29, 1969.

Recently, a medical problem in which leprosy was considered in the differential diagnosis occurred in a Vietnam veteran. In early Oct 1968, a 19-year-old American soldier with a maculopapular rash over the arms and lower trunk, fever, and periorbital edema was admitted to a hospital in Vietnam. There a chest X-ray revealed a pleural effusion on the left, but a study of pleural fluid was not diagnostic. A single thick blood smear was positive for *Plasmodium vivax,* and the patient was treated with chloroquine and primaquine; however, fever persisted. In addition, the patient reported taking relatively regular malaria prophylaxis of chloroquine weekly and 25 mg of DDS daily. Scrub typhus was then considered and tetracycline therapy was begun. Neither fever nor rash improved, and the patient was transferred to a military hospital in Japan where the skin lesions were felt to be compatible with leprosy. The patient was then transferred in mid-December to a military hospital in New Jersey.

After admission, the patient had almost daily temperature elevations to 101-102°F, but occasionally for several consecutive days was without fever. New skin lesions developed in the involved areas of the lower trunk and arms and progressed to include the face and chest. Several skin biopsies were performed. The slides showed a noninfectious granulomatous process involving the dermis and no acid-fast bacilli. No specific diagnosis was made. A liver biopsy and several bone marrow studies were normal. The peripheral white count was normal to low with a decrease in lymphocytes, and no abnormal cells were seen. Multiple cultures of blood and skin lesions were negative for bacteria and fungi.

The distribution of the skin lesions was not typical of a particular disease, but the general character was compatible with erythema nodosum leprosum as seen in patients taking DDS. Because the patient had no history of exposure to leprosy in the United States and because his stay in Vietnam was less than the usual incubation period for leprosy, this diagnosis seemed unlikely.

Additional thick skin biopsies revealed prominent proliferation of atypical reticular cells and lymphocytes and histiocytic cells with many mitotic nuclei in the perineural and perivascular areas. Microscopic sections of a lymphoid mass removed from

the right axilla showed diffuse infiltration of atypical histiocytes throughout sinusoidal areas, and malignant histiocytosis stage 4B with widespread disease and systemic symptoms was diagnosed. On 14 Feb, the patient was begun on IV cyclophosphamide. Three days later, his fever began to subside, he began to feel better subjectively, and the skin lesions were markedly improved. Recurrent left pleural effusion has occurred. Cyclophosphamide therapy is continuing.

Editorial Comment: There have been 45 American servicemen who developed leprosy subsequent in time to military service during World War II and the Korean War without known exposure prior to military service. No cases have been reported in servicemen who have served in Vietnam, other than in those who had possible exposure to leprosy either before joining the service or in other parts of the world.

PUBLICATIONS AVAILABLE

The Preventive Medicine Division of BUMED has a limited supply of several publications available for distribution to interested parties:

1. Epidemiology of Acute Respiratory Disease in Military Recruits
2. Recent Development in Therapy and Control of Meningococcal Infections
3. Epidemic Enteric Infections Among Prisoners of War in Korea
4. Smoking and Health
5. World Atlas (Seuchen) of Epidemic Diseases, Volumes I and III

Copies of these publications can be obtained by writing BUMED (Code 72), Navy Department, Washington, D.C. 20390.

If copies are not received within six weeks, requesters can assume supplies have been exhausted.

KNOW YOUR WORLD

Did You Know?

That 3 human plague cases occurred in the United States in 1968?

Two cases recovered with prompt treatment, but the 3rd was fatal. The first case, a 6-year-old girl living in the east-central section of Denver, Colo., was admitted to a hospital on 11 June; the 2nd case, an 8-year-old Navajo Indian girl from Tsegi Canyon (near Kayenta), Ariz., developed a febrile illness. On 19 Oct, a 32-year-old packer and hunting guide in Salmon, Idaho, became ill with plague 3 days after he killed and skinned an apparently healthy snowshoe hare. He died 25 Oct with multiple gangrenous lesions at the tips of all his extremities. This was the first recognized case of plague in Idaho in 28 years.[1]

That smallpox is still endemic in 27 countries in Africa, South America and Asia?

Between 1946-1968, the disease was introduced from these permanent foci of infection into nonendemic countries, mainly in Europe, on at least 80 occasions. The only solution is to eradicate the disease from its endemic foci.[2]

That a total of 214 cases of diphtheria and 181 carriers were reported in 1967 to the NCDC Atlanta?

Diphtheria incidence and mortality rates have remained relatively constant compared with 1965-1966, but have decreased greatly from previous years. Case fatality ratio did not change in 1967. Attack rates in the South were 10 times higher than for other parts of the country. Diphtheria continues to be a disease primarily of children under 10. None of the persons who died had completed the primary immunization series. The morbidity of diphtheria, secondary to nontoxigenic *Corynebacerium diphtheriae* strains was less than diphtheria secondary to toxigenic organisms. Gravis types predominated in the West; compared with previous years a higher proportion of gravis strains were nontoxigenic.[3]

That 1 in every 11 Americans has arthritis as compared to the old figure of 1 in 16?

According to the 1967 annual report of the Arthritis Foundation at least ⅕ of all arthritics are disabled at any given time. The total annual cost of arthritis to the national economy, including wage losses and medical care costs, is estimated at more than 3½ billion dollars.[4]

That 17 states reported 45 cases of human psittacosis in 1968, 4 more than 41 cases in 1967?

California reported the greatest number, with Michigan, New York and Texas tied for second place. Twelve states had an increase in 1968, 13 states reported a decline, and 1 state reported the same number of cases in 1967 and 1968. Seven states had cases in 1968 but none in 1967; 9 states reported cases in 1967 but none in 1968. Of 37 cases, 27 (73%) occurred in the winter and spring months. Parakeets were responsible for 17 of the 37 cases (46%), due to exposure to pet parakeets in homes.[5]

That more than 10 million pounds of artificial sweeteners are being used annually in the U.S.?

Seventy percent is utilized by the beverage industry alone. There are 3 categories of artificial sweeteners: sodium and calcium cyclamate, cyclamic acid and saccharin; all differ in strength but the first is the most potent. The safety of artificial sweeteners has been reexamined. The U.S. Food and Drug Administration recommended no limit on consumers' intake, but on 13 Dec 1968, released a report stating: "Totally unrestricted use of the cyclamates is not warranted at this time." Evidence would not alter the previous finding that the adult dose of 5 grams per day or less presented no health hazard; this is equal to 100 tablets which present no difficulty, according to the FDA.

According to declarations on labels of soft drinks a 10 oz bottle contains more than 1 gram of cyclamate. The intake for a 60-lb child should be limited to 1.35 grams per day, thus 2 bottles could exceed that allowed. Caution is urged in the use of artificial sweeteners, particularly where children are involved.[6]

That the Pan American Sanitary Bureau, which acts as WHO Regional Office for the Americas, founded 2 Dec 1907, is not only the world's oldest international health organization but operates the world's largest regional health Program?

In 1968, it supported some 500 health projects on a budget of $24.5 million.[7]

That 53 centers participated in the Shigella Surveillance Program and reported 2,776 isolations with 18 different serotypes of Shigella for the 4th Quarter of 1968?

This is an increase of 6.3% from 2,612 isolations in the 3rd Quarter of 1968 and a decrease of 17.4% from 3,362 isolations in the 4th Quarter of 1967. 71.0% isolations were from children under 10 years of age; highest attack rate, 1-4 years of age.[8]

That in Sept 1968 an International Reference Center on Wastes Disposal has been established at the Federal Institute for Water Supply, Sewage Purification, and Water Pollution Control in Zurich, Switzerland?

The Fed Govt of Switzerland has allocated 60,000 Swiss francs for 1968 and 260,000 for 1969 to the Institute for recruitment of technical and administrative staff; provision of facilities; training of personnel; etc.[9]

That the City of San Diego, in conjunction with the San Diego Gas and Electric Company, plans to *harness the 80-mgd flow* from its metropolitan sewerage system to generate electricity?

The proposed hydroelectric generating plant would utilize the 95-foot head between the existing primary treatment plant and ocean outfall. Plans call for the construction of a gas-turbine generating plant near the site of the hydro facility. The plant will consume odor-causing vapors from the treatment works.[10]

That in a case of murder in 1878 in which blood stains on the clothes of one of the suspects were shown to contain "black pigment particles (which) indicated the destruction or alteration of the blood-corpuscles and the escape of the haematin of the red globules which is characteristic of malaria fever," the murdered man had been suffering from malaria at the time?

This observation was made by a Dr. Joseph Jones, Professor of chemistry of the University of Louisiana 2 years before the discovery of the malaria parasite by Laveran in 1880. The association between malaria and pigmentation in the blood was noticed by Meckel in 1847.[11]

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EDITOR'S SECTION

MEETING OF THE SOCIETY OF MILITARY ORTHOPEDIC SURGEONS

The Society of Military Orthopedic Surgeons (S.O.M.O.S.) meeting is to be held at the National Naval Medical Center, 22 through 24 September 1969.

Those on the West Coast who are eligible for the military airlift should contact Captain George M. Ricketson, MC USN, NH Oakland, California.

Reserve officers are invited and may apply for this meeting via their district command.

For further information, contact Captain Robert H. Brown, MC USN, Naval Hospital, Bethesda, Maryland 20014.

MILITARY AND OTHER GOVERNMENT PHYSICIANS TO MEET IN WASHINGTON

Emphasizing "The Medical Team" theme, physicians of the Public Health Service and the Veterans Administration will convene with medical officers of the three military services at the 76th Annual Meeting of the Association of Military Surgeons of the United States on November 16 through November 19 at Washington's Sheraton-Park Hotel, Major General James T. McGibony, MC, President of the Association announced. General McGibony, formerly Deputy Surgeon General of the U.S. Army is presently Chief Surgeon of the U.S. Army, Europe.

As the oldest major organization of medico-military officers in the United States, the Association of Military Surgeons has contributed through the years since its establishment in 1891 to the progress of both military and civilian medicine. President Theodore Roosevelt, the keynote speaker at its annual meeting in 1902, called upon the Association's members to "pay possible heed to the scientific side of your work," and "to supplement in your calling the work of the surgeon with the work of the administrator." In keeping with this advice, the meeting this year will be devoted to the clinical experiences of medical officers involved in a war which has produced about 250,000 casualties. Throughout the meeting attention will be given to the need for the continued cooperation between members of the health care team as well as to the relationships between the representatives of the Federal Health Services.

Colonel Robert H. Moser, MC, Chief of the Department of Medicine, Water Reed General Hospital, will present this year's Sustaining Membership Lecture. His paper is entitled "Diseases of Medical Progress 1969."

The William C. Porter Lecture in psychiatry will be given by Dr. Albert J. Glass, Director of the Oklahoma Department of Mental Health. His paper is entitled "The Role of Military Psychiatry in the Development of Community Mental Health Services." Doctor Glass is a former military surgeon who served as a consultant to the Army Surgeon General and as chief psychiatrist in the Far East Command during the Korean War.

The scientific program will start on Monday, 19 November, with a panel on Care of the Acutely Ill Patient. It will be followed by additional panels of experts covering such diverse areas as research activities in the Federal Services, military contributions to medicine, and comprehensive health care.

More than 115 technical and scientific exhibits will be displayed, while each day a number of prize-winning films of interest to physicians in all specialties will be shown.

A varied program has been prepared for wives of the participants, with visits to major points of interest in the Washington area planned. A variety of social events, including a White House function, will assure a busy but rewarding social calendar.

By Sunday afternoon, 16 November, officials of the Association anticipate that more than 3,000 members will have registered. Reserve officers of the Armed Forces will be authorized retirement points for attending the meeting by registering with the Reserve Desk.

Brigadier General James A. Wier, MC, Office of the Assistant Secretary of Defense (Health and Medical), is General Chairman of the Convention. Colonel Robert W. Green, MC, Office of the Army Surgeon General, will direct the Scientific Program. —Association of Military Surgeons of the United States, Washington, D.C.

AFIP FROZEN SPECIMENS —TIME TABLE

This time table has been prepared for the guidance of personnel in preparing fresh tissue specimens being shipped for use in Toxicological Studies at the Armed Forces Institute of Pathology. This table gives the estimates for outside temperature and number of hours in transit and will assure that suf-

Outside Temperature	No. Hours In Transit	Weight Of Specimen	Amount Of Dry Ice
Below 50 Degrees "F"	72 hrs.	2 lbs.	5 lbs.
	48 hrs.	3 lbs.	4 lbs.
	24 hrs.	4 lbs.	3 lbs.
50 – 80 Degrees "F"	72 hrs.	2 lbs.	5 lbs.
	48 hrs.	3 lbs.	4 lbs.
	24 hrs.	3 lbs.	4 lbs.
80 – 100 Degrees "F"	72 hrs.	1 lb.	6 lbs.
	48 hrs.	2 lbs.	5 lbs.
	24 hrs.	3 lbs.	4 lbs.
Over 100 Degrees "F"	(not recommended for shipments over 48 hrs.)		
	48 hrs.	1 lb.	6 lbs.
	24 hrs.	2 lbs.	5 lbs.

ficient dry ice will be used to protect the specimens to the final destination.

Laboratory personnel are requested not to ship frozen specimens through a common courier on Fridays. These specimens are received at the Air Terminal Cargo Buildings which are not equipped to preserve tissue remaining over weekends and holidays. Frozen tissue must be pre-frozen prior to the dry ice packing. The Armed Forces Institute of Pathology should be informed by TWX as to the ETA, Flight #, GBL #, and Airport (3 in the Washington, D.C. Area).

Those shipments forwarded from overseas installations must be re-iced at the Port of Embarkation if transported by Military Aircraft. In the event that Commercial Airlines are used additional icing is required since all specimens arriving from outside the "CONUS" must clear through the "U.S. Customs."

Submitted by Mr. Donald G. Koelle, Chief, Tissue & Block Branch, Professional Records Division, Department of Pathology, Armed Forces Institute of Pathology.

PULMONARY DISEASE FELLOWSHIP TRAINING PROGRAM

The Pulmonary Disease Fellowship Training Program offered at the Naval Hospital, National Naval Medical Center, Bethesda, Maryland, has been revised. The current program will consist of two years of training and includes a second year of training at The Johns Hopkins Hospital and its affilate, The Good Samaritan Hospital, Baltimore, Maryland under the supervision of Doctors Wilmot C. Ball, Jr., Physician-in-Charge, (Chest Clinic) and Director, Respiratory Laboratory, Johns Hopkins Hospital, and Peter C. Luchsinger, Chief, Respiratory Disease Section, The Good Samaritan Hospital. This second year of training will consist of six months' training at Johns Hopkins Hospital and six months' training at The Good Samaritan Hospital.

Requests for training in the above program should be submitted to the Bureau of Medicine and Surgery, attention Code 316, in accordance with BUMED INSTRUCTION 1520.10 Series.—Training Branch, BuMed.

AVAILABILITY OF TRAINING AS A RESIDENT

Navy residency training programs are oriented to prepare physicians to meet the requirements leading to eligibility for examinations for certification by an American Board. All residencies are approved by the various specialty boards and by the Council on Medical Education of the American Medical Association. Approved training in every major specialty and subspecialty of medicine and surgery is available. The Navy offers training in nine naval hospitals in the Continental United States and, depending on the needs of the Service, sponsors training in civilian medical schools and medical centers throughout the country.

Interested personnel should apply prior to 1 September 1969 for training to begin in the summer of 1970. It is anticipated that the Bureau Professional Advisory Board will meet on 15 September 1969 for selections to outservice training and in mid October for inservice training.—Training Branch, BuMed.

DEPARTMENT OF THE NAVY

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